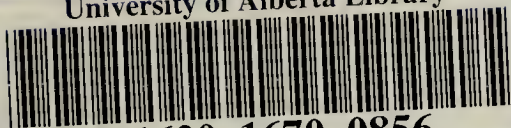


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BLUE JAY

June 1992



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Cover: Female Ruby-throated Hummingbird at her nest, Regina Beach, Saskatchewan. Doug Gilroy

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Blue Jay

Vol. 50 No. 2

June 1992

65-128

Plants

A TREE GIANT. *Ron Jensen*66

ADDITIONS TO THE FLORA OF CYPRESS HILLS PROVINCIAL PARK WEST
BLOCK IN SOUTHWESTERN SASKATCHEWAN. *Bernard de Vries*67

Insects

A NEW SKIPPER FOR SASKATCHEWAN. *Ronald R. Hooper*.....70

Amphibians and Reptiles

TURTLES, SNAKES AND SALAMANDERS OF
EAST-CENTRAL SASKATCHEWAN. *Donald F. Hooper*.....72

Birds

RED-BELLIED WOODPECKER SIGHTING AT SALTCOATS. *J.R. Jowsey*78

OBSERVATIONS ON WOODPECKERS — 1991. *Bernie Gollop*.....79

FISHING FOR NORTHERN HAWK OWLS NEAR
PRINCE ALBERT. *Myron Barton*80

THE SQUAW CREEK SAGA. *C. Stuart Houston*.....81

A MOTHER AND SON'S FIRST NATURE TRAIL EXPERIENCE. *Carol Merasty*85

OBSERVATIONS ON THE AMERICAN WHITE PELICAN. *Miles Constable*86

NORTH AMERICA'S OLDEST GREAT HORNED OWL. *C. Stuart Houston*.....88

NEW GREAT HORNED OWL LONGEVITY RECORD. *Robert W. Nero*.....91

WHERE DO CANADIAN BURROWING OWLS SPEND THE WINTER?
Paul C. James.....93

TOLERANCE OF SHORT-TERM DISTURBANCES BY SHARP-TAILED GROUSE.
Jim Wedgwood.....96

DO CROWS (C)AW IN CREE? *Anna L. Leighton*.....100

PEREGRINE FALCON IN MANITOBA — AN HISTORICAL PERSPECTIVE.
Robert P. Berger and Robert W. Nero101

TRUMPETER SWANS BREEDING IN EAST-CENTRAL SASKATCHEWAN.
Len Shandruk, Donald F. Hooper, and Rhys Beaulieu107

VIOLET-GREEN SWALLOWS AT SASKATOON. *David H. Wright*.....109

NOTES ON COOPER'S HAWK NESTING IN WINNIPEG. *Jean Bancroft*110

SECOND WINTER RECORD OF BLACK GUILLEMOT AT CHURCHILL,
MANITOBA. *Robert W. Nero*.....113

BALD EAGLE PREDATION ON INLAND DOUBLE-CRESTED CORMORANT.
J. David Hunt, Roger M. Evans and George Shnier.....115

Mammals

ENCOUNTERS WITH WOLVES AT PRINCE ALBERT NATIONAL PARK.
Stuart Dechka117

BATS AND WEASELS. *Bernie Gollop*118

Nature Library

ONE LONG ARGUMENT. *Reviewed by Tim Tokaryk*.....119

A DICTIONARY OF ETHOLOGY. *Reviewed by George J. Mitchell*120

Poetry

SUMMER HAS COME. *Bogi Bjarnason*.....121

Letters

DO CARRION BEETLES KILL YOUNG BIRDS? *Lorne Rowell*.....123

MYSTERIOUS COCOON. *M.B. Evans*124

ALBINO MAGPIE NEAR EDMONTON. *Miles Constable*125

WHAT A BLACK-TAILED GODWIT LOOKS LIKE. *Frank H. Brazier*125

Notices

GUIDELINES FOR AUTHORS126

REQUEST FOR REPRINTS ON OWLS92

Editorial65

WANTED — HERP INFORMATION

Information on Saskatchewan’s amphibians and reptiles is poor indeed. The Saskatchewan Museum of Natural History and Saskatchewan Natural History Society have set up a sight record card inventory system to attempt to provide an information base of the province’s reptiles and amphibians. Sightings of any frog, toad, salamander, turtle, snake, or lizard, whether common or not, are all important and wanted. If you are able to help with providing this information, sight record cards will be forwarded to you on request. Please contact:

Keith Roney
Saskatchewan Museum of Natural History
2340 Albert Street
Regina, Saskatchewan
S4P 3V7
(306) 787-2801

EDITORIAL

Whenever I attend Saskatchewan Natural History Society (SNHS) Board meetings, I am continually impressed with the number and quality of projects that the Society has on the go.

The December 1991 issue of *Blue Jay* contained scenes of the Athabasca Sand Dunes taken from a slide show on the dunes that was supported by the SNHS, in an effort to increase public awareness about this magnificent ecosystem. In this issue, Bernard de Vries reports on his findings on rare plants in the west block of Cypress Hills Provincial Park. This endeavour was sponsored by the SNHS in response to clear-cutting taking place in the provincial park.

It would take up too much time and space to list everything that the SNHS is involved with, but here is a sampling of activities this volunteer-driven organization is involved in.

Project Burrowing Owl began in 1987 to protect this species' nesting sites on private and public land by encouraging landowners to participate in a voluntary agreement to leave the nest sites undisturbed. In 1992, the SNHS will initiate an annual province-wide communication plan to bring the needed publicity to encourage more landowners to sign the voluntary agreements. A toll-free number (1-800-667-HOOT) is now in service so that anyone who wishes can report sightings of Burrowing Owls or request more information on how to sign up for the program.

In another ambitious study, the SNHS will examine Saskatchewan agricultural policies. In many ways, the present policies encourages the agricultural sector to destroy wildlife habitat. Saskatchewan's policy must be changed to deter subsidized environmental degradation and to encourage agricultural stewardship practices. The study will make recommendations on

how these policies could be changed for the better.

The Pasquia Hills region of the province contains a number of provincially rare plants — some of which are noteworthy western outliers of a characteristically eastern deciduous forest and others representing disjunct southern subarctic floristic elements. Due to logging operations, action is needed now to be sure of saving intact any sizable remnant of the forests and associated habitats, including the unique species of the area. SNHS is taking an inventory of rare species to ensure these are not lost under logging machinery.

The Piping Plover habitat research project proposes to investigate the breeding habitat selection by these birds in Saskatchewan. Effective techniques for measuring the suitability of nesting and feeding sites for this species will be developed. The resulting Habitat Suitability Index will greatly improve the capability of conservation agencies to locate suitable Piping Plover habitat, assess likely development impacts and design an effective conservation strategy for the species on the prairies.

All of these studies add greatly to the accumulated knowledge of the ecosystem of which we are part. Pretty impressive stuff for part-time naturalists. Reports from these studies and others that the SNHS has commissioned will appear in upcoming issues.

The September 1992 issue will be a celebration of the 50th anniversary of the *Blue Jay*. Stuart Houston has done a considerable amount of work to compile information on the early days of the *Blue Jay* and the Saskatchewan Natural History Society, the basis that has made it possible for the SNHS to do so much important work now.

A TREE GIANT

RON JENSEN, 849 10th Street Northeast, Swift Current, Saskatchewan.
S9H 2T5

The tree is a giant by any standard. It is a Laurel-leaved or Bay-leaved Willow (*Salix pentandra*). This particular tree sits along the shore of Clearwater Lake near Kyle, Saskatchewan. The species is not native to Canada. It is a "Eurasian species, introduced and planted as an ornamental" according to Budd's *Flora of the Canadian Prairie Provinces*. A

short paragraph on the species describes it as a small tree not over 7 m tall. The single specimen described in this articles was measured at 22 m tall. The trunk girth and diameter are equally overwhelming at 5.56 m and 1.77 m respectively.

Staff at the Prairie Farm Rehabilitation Administration (PFRA) Tree



Giant willow (22 m tall) at Clearwater Lake, Saskatchewan

Ron Jensen

Nursery who identified samples of winter twigs and leaves indicated 10 m tall would be considered above average height for the species.

According to Gordon Nelson of Kyle, his father, Elmer Nelson, the landowner, planted the tree in 1925, before Clearwater Lake became a Regional Park. As you may note from the picture, the tree grows very close to the lake edge now surrounded by vacation cabins. The source of the tree is unknown but the PFRA Tree Nursery at Indian Head was sending trees out for planting prior to 1925. Gordon Nelson cannot

remember the size of the tree when it was planted. If a sapling of three years was planted, it is now nearly 65 years old. I could not find any information on longevity of this willow species, however, PFRA staff indicated that 65 years is old for this species of willow. Its size and age without doubt say something about the preferred habitat of the Laurel-leaved Willow.

To give an idea of scale, the two people in the picture, taken 21 December 1991, are my son Jeffrey (1 m tall) and nephew Brad Tyberg (1.8 m tall), both of Swift Current.

ADDITIONS TO THE FLORA OF CYPRESS HILLS PROVINCIAL PARK WEST BLOCK IN SOUTHWESTERN SASKATCHEWAN

BERNARD DE VRIES, George F. Ledingham Herbarium, University of Regina, Regina, Saskatchewan. S4S 0A2

The Cypress Hills are situated in the arid short-grass prairie in southwestern Saskatchewan, forming a high plateau on the plains of western Canada. The elevation of the plateau ranges from 870 to 1350 m and is bisected by a major valley, called the "Gap." The plateau consists of two parts, the centre block and the west block. The Cypress Hills are of interest because they support a rich and varied flora of montane and boreal species. Above 1300 m a coniferous forest occurs, similar to that in the southern Rocky Mountains.

In 1990, a study was designed to

survey proposed logging areas in the centre and west blocks of the park, in order to assess the status of rare and endangered plants, their critical habitat and potential means for their preservation. This article documents three vascular and two non-vascular species new to the flora of the west block that were found during the study.

The earliest botanical reports for the Cypress Hills were made by John Macoun between 1880 and 1892.⁶ Breitung, Ledingham (pers. comm., 1991), de Vries and others have undertaken more recent floristic studies.^{2,3,4,5,7}

The following annotated plant list was compiled personally by the author, except for the *Sphagnum* species which were identified by Dr. Dale H. Vitt, University of Alberta. Where possible, only a small sample was collected under permit and deposited at the George F. Ledingham Herbarium in Regina. Collection numbers and data follow each species. The nomenclature follow Scoggun and Vitt.^{9,10}

Musci – Sphagnales

The discovery of a small *Sphagnum* population was surprising as it occurred not in a *Sphagnum* bog as found in the Rocky Mountains and northern boreal forest, but rather in a sedge (*Carex*) meadow surrounded by mixed forest.

Hypothetically, *Sphagnum* could have entered the unglaciated west block, when two major climatic events occurred: the Holocene warm period during which the isolation of the Cypress Hills from the Rocky Mountains and northern boreal forest may have taken place; or the shift to a cooler and wetter climate influencing the establishment of small "bogs" suitable to *Sphagnum* in Cypress Hills Provincial Park.

Sphagnum warnstorffii Russow (Peat-moss) No. 1991.12. Very rare. In shallow depression in sedge meadow. Previously reported for the centre block as *Sphagnum warnstorffianum* Du Rietz.¹ The location adjacent to logging area No. 9 is now presumed to be lost due to clear-cutting of the immediate area. This will undoubtedly have a serious impact upon the ecosystem of the area and the critical habitat for this species.

Musci – Bryales

Plagiomnium ellipticum (Brid.) Kop. (which has also been listed as

Plagiomnium rugicum (Laur.) Kop.) No. 19,587. Collected once with *Orchis rotundifolia* Banks (Round-leaved Orchid) on small sedge hummock. Not previously recorded for the Cypress Hills. This site adjacent to logging area No. 9 is presumed lost due to logging of the immediate area.

Lycopodineae – Lycopodiales

Lycopodium annotinum L. var. *annotinum* (Stiff Clum-moss) No. 19,545. Observed once as a small colony in a shaded Lodgepole Pine and aspen woods.²

Lycopodium complanatum L. var. *complanatum* (Ground Cedar) No. 19,532. Discovered in shaded Lodgepole Pine ravine in block 50, and again as a small population in blocks 9 and 57 in shaded Lodgepole Pine and White Spruce woods. Previously reported for the centre block.⁵

Botrychium virginianum (L.) Sw. var. *virginianum* No. 20,846. Rare. In shaded White Spruce and aspen woods at base of slope. One colony of three plants only. In proposed logging area 5. Previously reported as occurring in aspen woods.²

Discussion The presence of relict boreal elements in the flora of southwestern Saskatchewan is always interesting, especially since Cypress Hills Provincial Park is isolated by vast expanses of grassland. How did these boreal and montane species arrive in Cypress Hills? Russell put forth the hypothesis that certain types of flora could have entered the Cypress Hills in early post-glacial time from the southwest following deglaciation to the northeast.⁸ *Sphagnum* and *Lycopodium* may have found a niche here at the same time, when climatic

conditions favoured forest growth and the formation of *Sphagnum* "bogs." They became relict species when a warm climate regime isolated the Cypress Hills from the Rocky Mountains.

All species recorded above have a cosmopolitan distribution in the foothills, Rocky Mountains, and northern boreal forest but are very restricted in Cypress Hills Provincial Park.

Acknowledgements

The 1990/1991 study was jointly financed by the Saskatchewan Department of Parks and Renewable Resources (SPRR) and the Saskatchewan Natural History Society. Special thanks are extended to Mr. John Vandall and Mr. Bruce Walter of SPRR; Miss Chris Potter, park naturalist at Cypress Hills Park; and the administrative staff, for their co-operation and assistance. The author would like to thank Mrs. Irma Machmer for her tireless assistance with field work and encouragement during the 1991 floristic study.

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Through all this glorious country, the river ran its jungled course ... bringing water to the plains and marshes, flooding them with melted snow, replenishing them with silt and nutrients. Now nearly all of this balanced life is gone because you and I, and our parents and grandparents, said yes, or said no and were not heard, or said nothing. *Braun & Cavagnara. 1971. Living Water. American West, Palo Alto, CA.*

A NEW SKIPPER FOR SASKATCHEWAN

RONALD R. HOOPER, Museum of Natural History, 2340 Albert Street,
Regina, Saskatchewan. S4P 3V7

On 21 June 1991, I attended the official opening of the Rendek Elm Forest, east of Erwood, Saskatchewan. Late in the afternoon, after everything was over, my brother Donald, Les Baker, and I took a drive. We went farther east and drove north of Armit.

We stopped along a marshy area where the Flat-topped Aster (*Aster umbellatus*) grows. This is the food plant of a beautiful orange butterfly known as the Harris' Checkerspot (*Charidryas harrisii* (Scudder)). This is the most northern locality where this species is found.

When we continued northward to the Red Deer River I discovered a

specimen of the Silver-spotted Skipper (*Epargyreus clarus* (Cramer)). This is Saskatchewan's most north-eastern record for this species.

Near the river, we saw a scolding Winter Wren, so my brother Donald and I decided to return the next day to look for its nest. We did not find the nest, but along the edge of a Jack Pine and aspen wood I collected Saskatchewan's first record of the Pepper and Salt Skipper (*Amblyscirtes hegon* (Scudder)). It was quite worn, but still recognizable. This brings the list of Saskatchewan skippers to 34 species.

The Pepper and Salt Skipper occurs in the woodlands from



Pepper and Salt Skipper (underside), Manitoba

Keith Roney



Pepper and Salt Skipper (underside), Manitoba

Keith Roney

eastern Canada to the Riding Mountains of Manitoba.

The Pepper and Salt Skipper is quite similar to the Roadside Skipper (*Amblyscirtes vialis* (Edwards)), and can be easily confused with it. It differs in having only three subapical white spots on the forewing; the Roadside Skipper usually has some white streaks above the uppermost spot. It also has two spots below the subapical spots toward the median area of the wing. The lowest one of these spots is rather long and curved; these spots are generally smaller or absent on the Roadside

Skipper.

The underside of the hind wing is dusted with pale greenish on fresh specimens. There is a pale streaking along the veins, and a pale band crosses the wing a little outward from the median area. The underside of the hind wing on the Roadside Skipper has a definite band right across the wing.

Fresh specimens of the Pepper and Salt Skipper should be found in Saskatchewan in late May and early June.



No species but man, so far as is known, unaided by circumstance or climatic change, has ever extinguished another, and certainly no species has ever devoured itself, an accomplishment of which man appears quite capable. *Peter Mattiessen. 1959. Wildlife in America. Viking, NY.*

TURTLES, SNAKES AND SALAMANDERS OF EAST-CENTRAL SASKATCHEWAN

DONALD F. HOOPER, Box 40, Somme, Saskatchewan. S0E 1N0

A telephone call from Mac Chimko of Chelan about a salamander in the snow aroused my scientific curiosity about turtles, snakes and salamanders in the area. This article is the result of information gained through personal communication.

Upon arriving at Mac's place I found that they had the salamander in a box in the house and they already had a name for it — "Sally." The grandchildren had found it wandering around in the snow on the afternoon of 20 October 1991. Mac back-tracked it down the hill from the

farmyard. At one point the salamander had gone into a Thirteen-lined Ground Squirrel's hole and out again. It seemed that this disoriented amphibian was looking for a place under the ground to hibernate. Back-tracking down to a slough at the bottom of the hill, Mac found that the salamander had travelled across about 70 m of snow.

On the night of 16 October, eight cm of snow fell. The ground under the snow was warm and not frozen as the weather had been very mild a few days earlier. The warmth of the



Gray Tiger Salamander in the snow near Chelan

Donald F. Hooper

ground was melting the snow from beneath and the freezing temperature was sealing in the surface of the ground with a crust of icy snow, which made it difficult for the salamander to get back under the ground.

Turtles, snakes and salamanders are generally uncommonly encountered in the southern part of the boreal forest. Many people in the Hudson Bay area have never seen even one of these in a lifetime. There are cases where specimens of turtles, snakes and salamanders are introduced, imported from other parts of the province when people capture them as pets and later release them or allow them to escape. Pet turtles native to the southern United States probably cannot survive Saskatchewan winters outdoors.

The Gray Tiger Salamander (*Ambystoma tigrinum diabolii*) ranges in eastern Saskatchewan north to Lady Lake, Lintlaw, and Gronlid.³ It is also reported as regular at McKague and larva have been seen near Barrier Lake by Alvin Hill and at Greenwater Lake Provincial Park by Wayne Harris and Sheila Lamont in 1983.⁵ This species is very rare from Greenwater Provincial Park northwestward.

Tiger Salamander Sightings Northeast of Greenwater Provincial Park (Figure 1)

Erwood – a few were seen in a clay bank east of town by Alex Rendek about 1966.

Hudson Bay – one crossed the highway eight km east of town in 1991 and was seen by Wayne Harris of Raymore.

Porcupine Plain – one found in the school basement by a student was brought to the teacher Margaret

Ashdown (later Hooper) prior to 1960.

The Western Painted Turtle (*Chrysemys picta belli*) is reported as common in Saskatchewan in the Qu'Appelle and Souris River systems.³ The range map given by Francis R. Cook in 1984 shows it extending northward to near Canora and in Manitoba from Winnipeg northwestward to north of The Pas.⁴ The following turtle sightings will help to fill in the gap between The Pas and Canora.

Turtle Sightings North of Canora (Figure 1)

Bjorkdale – Joe Kehrig saw one turtle about 10 cm across near town about 1975.

Chelan – a large turtle was found along the Greenwater Creek near town in about 1966 by Bruce Kistner. He said that it was big enough to stand on. [Editor's note: This is an unusual way of describing size, but may suggest that the animal was too big to be a Western Painted Turtle.]

Erwood – one was seen at a farm dugout by Gerald Coates for about three summers until 1982.

Greenwater Lake – park naturalist Jane Gallagher reported sighting one turtle in July 1990.

High Tor – Don Gabriel tells of one turtle that was found in the area and brought to the school in about 1953.

High Tor – one seen by Jerry Dutcyvich about 1968.

Hudson Bay – conservation officer Gary Harrison saw a turtle cross the highway east of town in June 1981.

Kinloch – north of town a turtle together with several smaller turtles was seen prior to 1968 by Odd Steiestol.

Western Painted Turtle

- ▲ -verified by photograph
- △ -unverified sighting

Gray Tiger Salamander

- ⊗ -verified by specimen or photo
- -unverified sighting

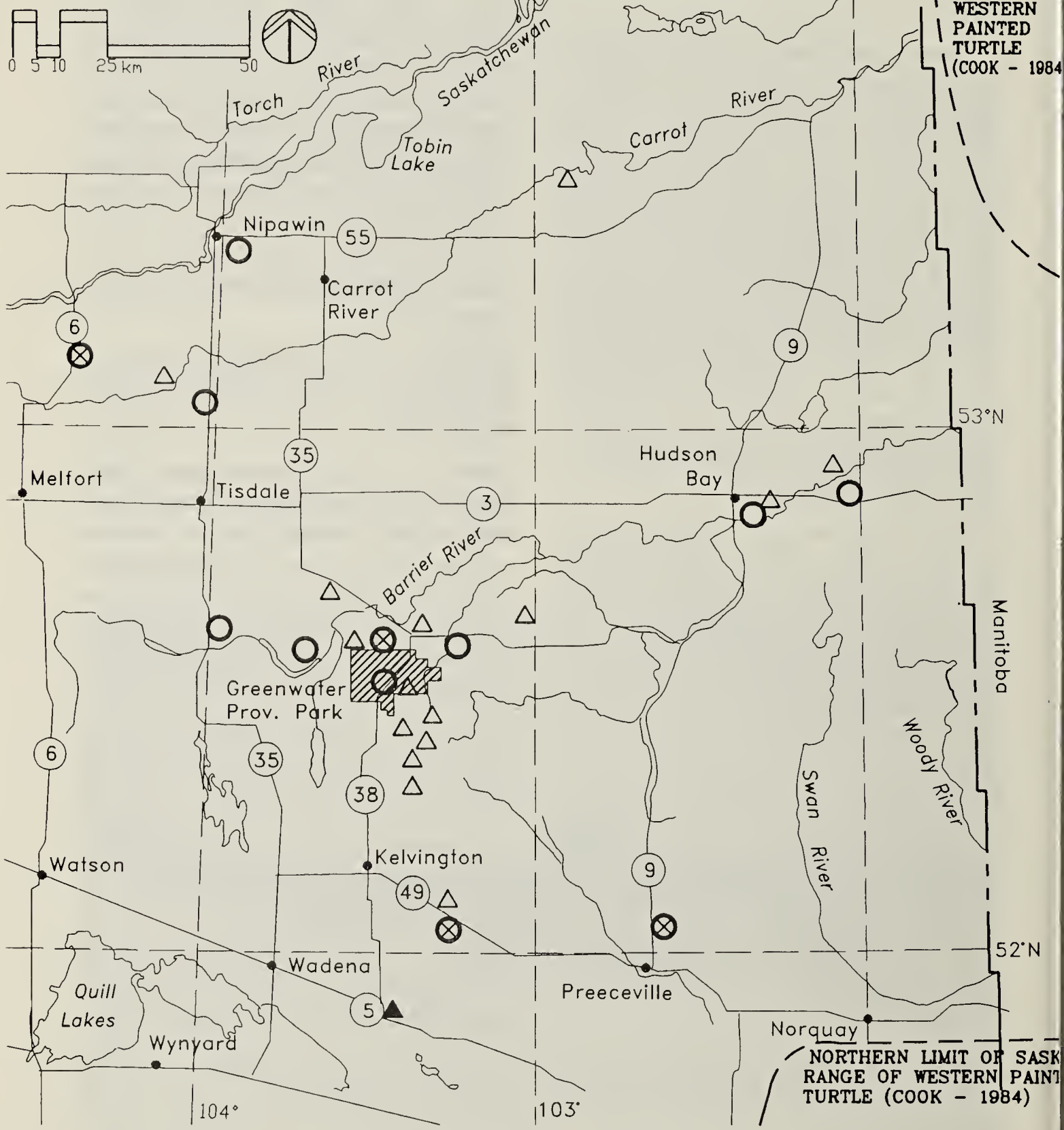


Figure 1. Sightings of turtles and salamanders in east-central Saskatchewan.

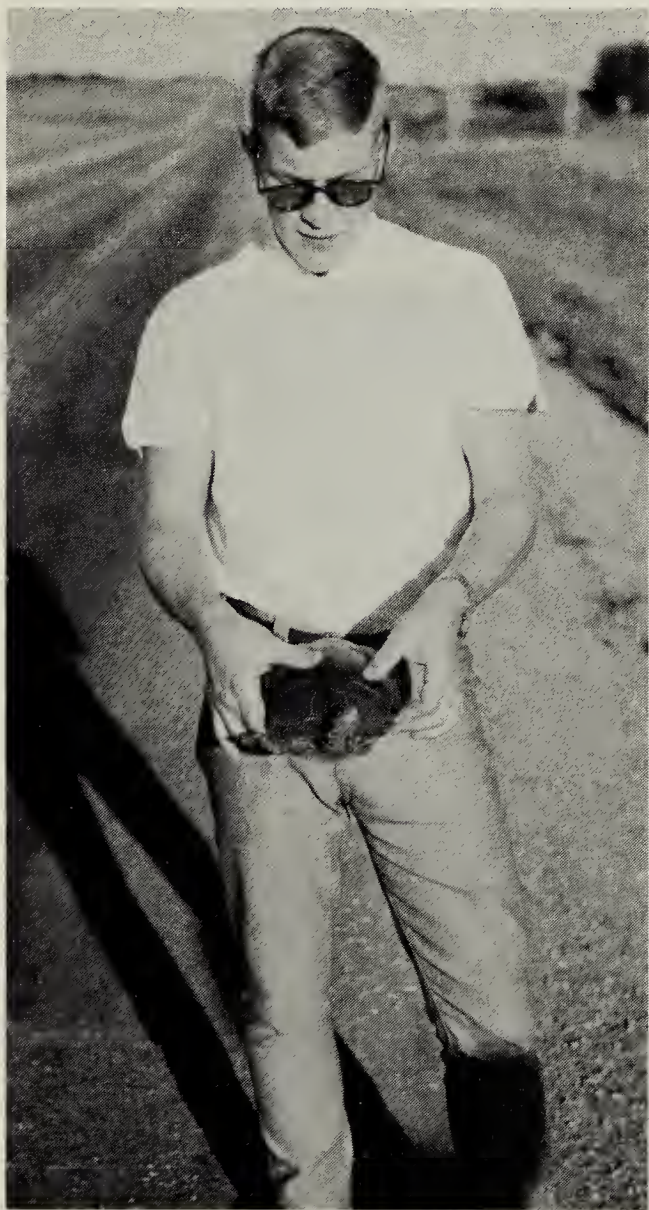
Kinloch – Mike Kryzanowski saw a large turtle cross the grid road east of town in August or September 1990.

Kuroki – one found along the highway by Jerry Dutcyvich and Rodge Bolton in July 1966. This record is verified by photograph.

Lintlaw – a turtle was seen at a farm dugout and was reported to Marguerite Sloan prior to 1985.

Marean Lake – a large turtle was found by Caroline Kewley in a farmyard north of Marean Lake in 1979. It probably came from a nearby pond. Caroline said that it compared well to a picture that she had of a painted turtle.

Marean Lake – Caroline Kewley's



Roger Bolton holds a Western
Painted Turtle near Kuroki
Jerry Dutcyvich

daughter Melody Paik found a large turtle in the same yard as above in August 1991. This specimen was taken to show others of her family and was later released in the Red Deer River near Bjorkdale.

Red Earth Indian Reserve – a sighting of one along the Carrot River prior to 1975 was reported to Ronald Hooper by a resident of the Reserve.

Ridgedale – one was found along the Carrot River by Harvey McRae in the 1940s.

Round Lake (near Kinloch) – a small turtle was seen near the southeast lakeshore by Jerry Dutcyvich about 1964.

Somme – One was found at a farm dugout north of town for two years and was last seen by George Martin about 1984.

The Western Plains Garter Snake (*Thamnophis radix haydeni*) was reported as locally abundant at Lady Lake by Donald Buckle in 1964. Several specimens were collected and sent to the National Museum in Ottawa.¹ Garter snakes are reported as common at Kelvington but they are uncommon to rare northward. Two specimens of Plains Garter Snake were found near Porcupine Plain in the late 1960s. These were preserved in alcohol by Don Gabriel at the Porcupine elementary school. One was donated to the Saskatchewan Museum of Natural History in January 1992 and it was verified as being a Plains Garter Snake.

Francis R. Cook states that the Plains Garter Snake inhabits the grassland and aspen parkland but does not invade the coniferous forest.⁴ Garter snakes are seen occasionally between Porcupine Plain and Cumberland House but specimens have not been identified. The Plains Garter Snake has black bars on lips and lateral stripe is on scale rows three and four.

Garter Snake Sightings between Porcupine Plains and Cumberland House (Figure 2)

Codette – one was seen west of town about 1985 by Glen Dobson.

Hudson Bay – Pete Welygan saw a snake and several smaller ones cross the highway east of town about 1986.

Hudson Bay – one was seen in the Red Deer River south of town about 1986 by Ed Tchorzewski.

Smokey Burn (northeast of Carrot River) – one was seen in September 1991 by Wilfred Trites and reported by Frank Armstrong.

The Red-Sided Garter Snake (*Thamnophis sirtalis parietalis*) is found on the Precambrian rocks at Amisk Lake and is also reported from Cumberland Lake.³ This species is rare in southern Saskatchewan. It has been reported from near Estevan, the Qu'Appelle Valley and the Cypress Hills.³ On the red-sided the lateral stripe

is on scale rows two and three.

Donald Hooper saw a large number of snakes on the rocks along the Sturgeon-weir River near Sturgeon Landing on 25 June 1985. These were probably red-sided.

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Western Plains Garter Snake at Punnichy

Donald F. Hooper

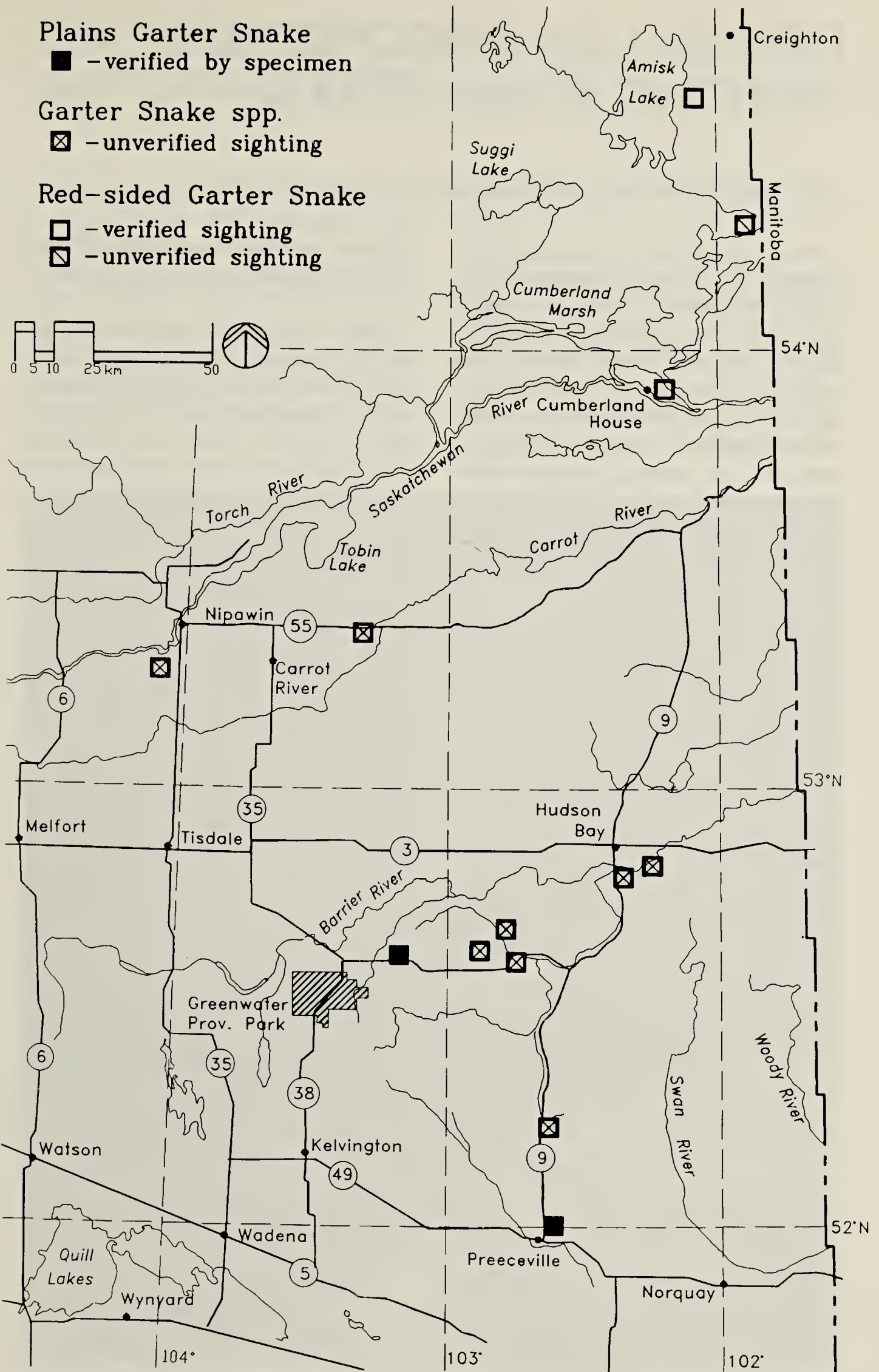


Figure 2. Sightings of snakes in east-central Saskatchewan.

RED-BELLIED WOODPECKER SIGHTING AT SALTCOATS

J.R. JOWSEY, Box 400, Saltcoats, Saskatchewan. S0A 3R0

Phone calls about unusual birds come to our house quite often at any time of the year. The clear description of the bird given by the caller caused my wife, Shirley, to relay one call to me with more curiosity than usual. She noted that the caller was Walter Brygider, whom we knew had more than an average interest in the natural world around him. Walter and his wife, Olga, felt quite certain that they had a Red-bellied Woodpecker in their farmyard.

Since Red-bellied Woodpeckers are not common anywhere in Canada, and since I had never seen one, I checked the field marks closely with Walter when I returned his call – top of head to nape of neck, bright red; sides of face and neck, off white, shading to reddish on abdomen; back and wings, black barred with white; size of a small flicker. Outer wings black with a white patch observed in flight. What else could it be?

By the time I got around to returning Walter's call, it was raining heavily and very windy, so we promised to visit them the next morning if the bird was still there.

Shirley and I then carefully worked over the descriptions and colour plates in our bird books for the Red-bellied Woodpecker. We also noted that one sighting had occurred in Saskatchewan in 1959, and know well how closely bird sightings were

checked by Margaret Belcher (*Birds of Regina*) and her cadre of birders.

Walter Brygider had a theory for us. The woodpecker, being like a flicker, had joined a group of flickers (at the flicker equivalent of a Saturday night party) and flew up here from Illinois or even Minnesota or Wisconsin. Anyway, here it was.

When we checked on 26 May 1991, the bird was still in the maples at the Brygider farm, three km south of Saltcoats. After some searching, with a good deal of help from Walter and Olga, we located the rare bird. It was, according to the field marks noted earlier, a Red-bellied Woodpecker, probably a young male, judging by the plumage colour on the underside. There was ample time to observe this bird in flight and later perched on a dead branch. We watched for some minutes as it preened in the sunlight. In spite of the fact I obtained no photographic record for confirmation, it is my considered opinion that, in view of the observation we made of this bird, it was, without doubt, a Red-bellied Woodpecker. After about five days the Brygiders did not see the bird again.

What a pleasant and interesting experience for all of us.



OBSERVATIONS ON WOODPECKERS — 1991

Woodpeckers I: On 22 August, I was on the hill in Diefenbaker Park (Saskatoon) counting crows. At 6:00 p.m., on one or two nearby wooden power poles, were two flickers on top, a Downy Woodpecker below them and a young sapsucker about midway up. All but the downy stayed until 6:42, with the sapsucker fly-catching periodically. As I drove away, I found that there were four

more flickers on the far side of the pole.

Woodpeckers II: On 29 August about 7:00 a.m., I counted nine flickers on a wooden power pole (and two on another) in Eagle Creek Regional Park, 45 km west of Saskatoon. — *Bernie Gollop*, 2202 York Avenue, Saskatoon, Saskatchewan. S7J 1J1



Male Yellow-Bellied Sapsucker, Winnipeg, April 1990

Gordon J. Smith

FISHING FOR NORTHERN HAWK OWLS NEAR PRINCE ALBERT

MYRON BARTON, Box 3083, Prince Albert, Saskatchewan. S6V 7M4

We have been fortunate to have a Northern Hawk Owl within half a kilometre of our place for the entire winter. The owl was first seen 7 November 1991 and was still there as of 18 February 1992.

It is very tame and has three or four favourite lookout trees very close to the road.

Having read of Robert Nero's success at luring owls to close range using an artificial mouse, I thought I would give it a try. I had trouble finding an artificial mouse around the house, so I finally decided to try a wiener. I got out the fishing rod and attached a wire where the hook would normally be. The wire was inserted into the partially fro-

zen wiener and I was ready for action.

Several times I tried casting out the lure and retrieving it in what I considered to be mouse fashion. The owl, however, was not convinced and although he was quite interested, would not cooperate further. It was probably just as well, since I am new to this neighbourhood and the neighbours might think it a bit strange to see someone fishing on the road at -30°C .

A few days later, I was able to get a real mouse, which made a meal for the owl when it was released. Wayne Harris banded this owl on 31 December 1991, shown in the photograph below.



Wayne Harris and Northern Hawk Owl he has just banded

Hazel Barton

THE SQUAW CREEK SAGA

C. STUART HOUSTON, 863 University Drive, Saskatoon, Saskatchewan.
S7N 0J8

In the early 1980s a pair of Ospreys used a dead spruce, unsafe for humans to climb, near the south edge of the muskeg at Squaw Creek, which empties into Upper Makwa Lake. Fearing that the tree was about to fall, we chopped it down in March 1985. We built a replacement platform in a tamarack chopped off 26 feet from the ground, nicely hidden by a thin rim of spruce trees beside Highway 699, between Loon Lake and Ministikwan Lake.

That summer the Ospreys raised three young, banded on 13 July. In 1986, Frank Scott sighted an Osprey sitting on the platform on 18 April, his earliest spring date. One young fledged, leaving an unhatched ad-dled egg in the nest. In 1987 two young were banded. In 1988 we captured and banded the adult female on her nest, using a temporary noose carpet over her four eggs. Unfortunately that July the $\frac{3}{8}$ inch lag bolts broke, the platform collapsed in a heavy windstorm and the young perished on the ground. The adults at once began building a new nest in a dead spruce several hundred yards out in the muskeg.

In March 1989 we constructed a new platform in a spruce, 34 feet above the ground. The Ospreys occupied their new platform, where we again trapped the adult female in early June and banded two young on 15 July.

On 2 June 1990 we trapped the

banded adult female for the third time. This was the year of the lowest productivity yet encountered near Loon Lake, both for nests on platforms and in live trees. This nesting attempt was among the many failures.

In 1991 the Ospreys moved to the nest in the unsafe dead spruce stub, 35 feet above the ground. What a pity. We could not band the three young. Even without them we tied our best-ever year, banding 29 nestlings.

Worried that the dead snag might blow over in a windstorm and kill the precious young, we recalled the 1989 feat of the indefatigable Nigel Mathews. Nigel had masterminded the erection of our first successful windmill platform in another muskeg south of the old railway grade where there was no tree in which to build a substitute platform. We asked Lawrence Beckie at Bladworth to look for another available windmill frame. The first farmer he contacted vacillated but then decided that he needed his unused windmill as a lookout to keep track of his cattle. Several other leads failed before Lawrence phoned again.

Harry's Trailer Rental, used by Nigel in 1989, provided a 16-foot trailer. On 19 July, Frank Scott, Dr. Carl Torbiak and Bernice Little joined my wife, Mary, and me. Alf Davis, Frank Scott's father-in-law, was willing to prefabricate the platform at

their acreage south of Saskatoon over the weekend, so that Kelly Wylie, David Miller, Frank Scott and Larry Chambers could transport it to Loon Lake on 22 July. We trundled the trailer down 70 miles, only to find that the windmill was broken and twisted on top and was out in the middle of an excellent crop. A superb windmill nearer Bladworth was also out in crop and we later learned the owner wished to prepare it as a future heritage exhibit. When we got back empty-handed at midnight, Harry Sakundiak generously charged us nothing for the trailer rental.

I phoned the wife of a friend who had once donated his old climbing spurs we still use. Her brother, retired from farming, had two non-functioning windmills near Bladworth. She tentatively promised me the windmill in the pasture, thinking he would like to keep the windmill in the yard for sentimental reasons. He decided the farm would not look right without two windmill frames.

On 20 July we placed a request in Heather Robertsons's column in the *Saskatoon Star-Phoenix* and three days later I went on Carol Blenkin's television show on CFQC-TV and on CFQC radio news. I told how immediate erection of a windmill might save two years production of this Osprey pair: this year's if a storm came along and next year's because it would take them a year to build a new nest. I got a response from Bob Robinson, a regular owl nest finder. Bob had sold a windmill to me for \$50 three years earlier. It was still dismantled. The new owner agreed to sell it back for \$50. On 24 July we rented the trailer again and made an evening journey of 90 mi. each way to just the other side of Prince Albert. Bob Robinson and Kelly Wylie, a former banding helper visiting from Ot-

tawa, went with us. We loaded up the windmill pieces and got home at 1:00 a.m.

Kelly, with Dr. Johann Kriegler, took the windmill on the trailer to Loon Lake on 25 July; they were joined there by Larry Chambers and Frank Scott. In Loon Lake village they drilled the holes in the lumber and the windmill frame. Larry Chambers brought his three-wheel all-terrain vehicle from Peck Lake, but it would not pull the windmill frame. The four men carried the lighter upper half of the windmill to the base of the birds' stub, with guy wires and other gear. They simply were not strong enough to carry the heavier lower half, and had to leave the area since they did not wish to disturb the Ospreys for more than an hour at a time. They had made a good trail from Highway 699 through the willows to the base of the nest stub, through spongy muskeg.

On 5 August, we set out early with John Hanbidge, David Miller, Dylan von Kuster and Dr. Jennie Lee in my vehicle and Dr. Johann Kriegler and Dr. Phil Browne, his wife Ann and son Brendan, in the other. The oldest Osprey nestling was now flying well. The second was perched on a nearby tree, but took off at our approach and flew in circles for 20 minutes. The youngest nestling remained on the nest. One of the adults carried both an aluminum band on the right leg and a blue band on the left.

After dragging the lower half of the windmill frame to the site, we put the two parts together and bolted on the pre-drilled wooden two-by-sixes, then with ropes pulled the frame erect, stabilizing it with four guy wires, ornamented with coloured tennis balls to warn any birds or aircraft



A frightened Osprey bander. The ladder does not touch the tree or the nest

Phil Browne

flying by.

Was there any chance of banding the remaining young Osprey? I calculated that if we tied our two 10-foot sections of aluminum ladder high on the windmill frame, that it might be possible to reach the young Osprey — or miss reaching it by about one foot. We joined the two 10-foot sections with cleats, then Johann and David roped the lowest 8 feet of the aluminum ladder to the windmill frame. The top 12 feet extended into the air, almost to the bottom of the giant nest.

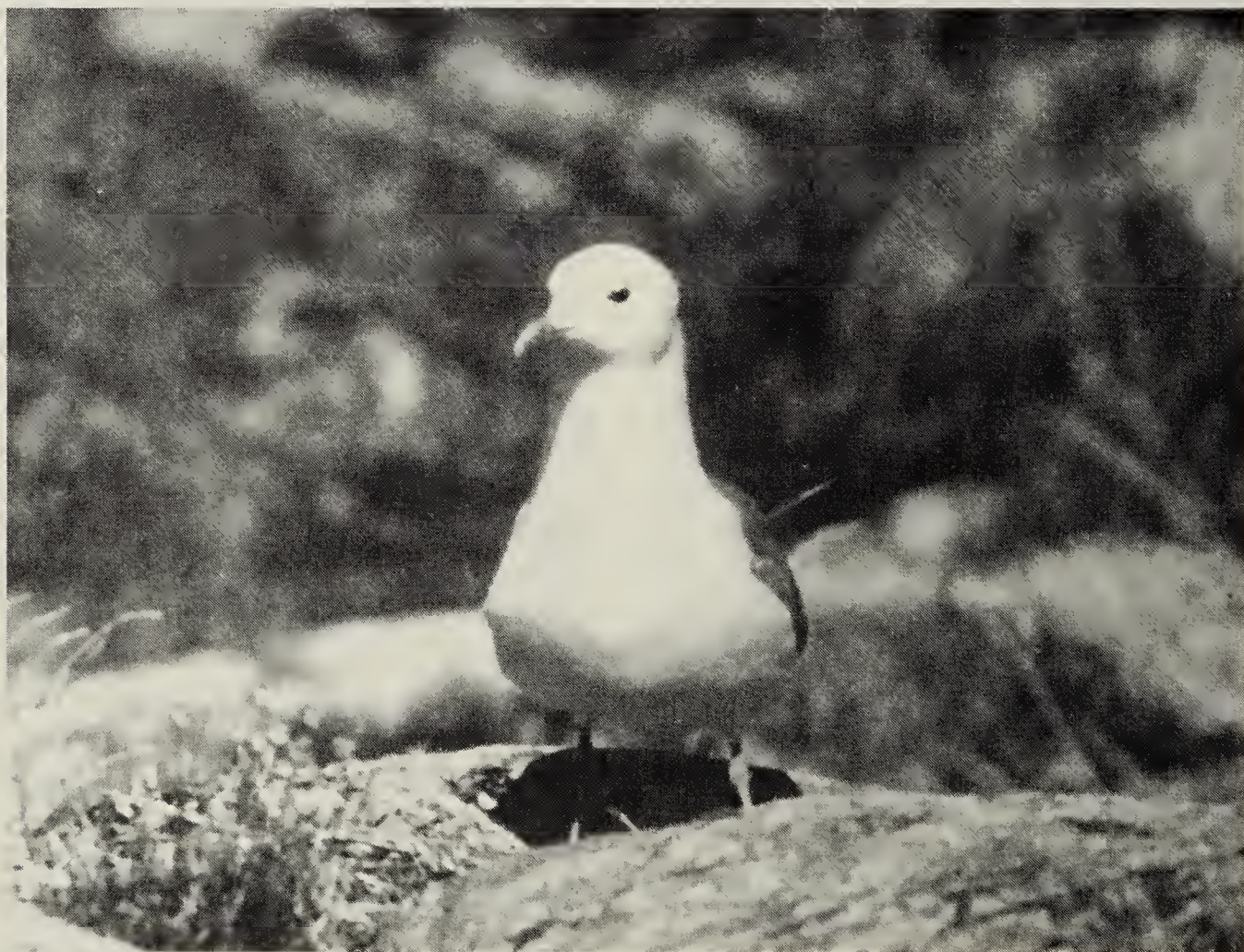
The 10 or 12 degrees sideways slope of the windmill ladder was both good and bad news. Unlike our previous windmill frame which had a built-in vertical ladder, this windmill's ladder tilted along the margin of the windmill that becomes narrower and narrower as it goes up. Did you ever try walking up 12 feet of slanting ladder into empty space, towards a giant nest in a totally rotten tree, leaning far to the left to keep vertical and not tilt the ladder even farther? However, had the ladder not tilted, it would not have put me within reach of the nest. John Hanbidge sat at the top of the frame, 24 feet up, with the

rope holding the ladder anchored to his waist, holding the ladder with his strong arms. ("Hercules Hanbidge," our friend Silvia Gerard calls him; in his youth he was second in Canada in his weight class as a wrestler and won a provincial championship this year against much younger opponents.) I would not have dared climb the ladder without John's strength to steady it.

I climbed the windmill's ladder and then up our roped-on ladder to below the bottom of the Osprey nest. The spruce was so obviously rotten that I dared not touch it. Directed by those on the ground, I reached over the nest with a stick and felt the nestling. It was very strong; it would not budge. I broke off two sticks from the edge of the nest so I could see the young Osprey. My cane was sent up on a string. Scared stiff and perspiring, I reluctantly and timidly went one rung higher than I felt safe. Scooping the Osprey with the curve of the

cane, I grasped the legs of a very healthy and fully feathered young Osprey which then flapped its wings furiously, as if trying to carry me off. I came down four steps, shaking the whole ladder. Those on the ground could hear my knees knocking. I put an aluminum band on the left leg, riveted the colour band on the right leg, climbed back up, retrieved my cane from the top of the nest, and put the Osprey back. *Fait accompli.*

On 15 March 1992 we returned to Squaw Creek and chopped down the dead tree, which to our amazement had withstood the wind in spite of its extremely rotten and weakened structure. We nailed the planks on top to complete the platform, before moving the contents of the 1991 nest structure onto the windmill frame. In future it will be easier to climb and band the Ospreys. I am too old to repeat another escapade up a roped-on sloping ladder.



Mew Gull, Lake Athabasca

Fred Lahrman

A MOTHER AND SON'S FIRST NATURE TRAIL EXPERIENCE

CAROL MERASTY, Box 191, Loon Lake, Saskatchewan. S0M 1L0

It was the third week of January 1992 and another cold spell had just ended for the residents of Loon Lake, Saskatchewan. This was followed by a warm spell, with the temperature hovering between 0° C and -3° C. It was the perfect opportunity to take my four year old son for a refreshing nature walk after being cooped up indoors for days. The sun was shining brightly in this mid-afternoon and a light breeze was blowing through the trees.

The trail we followed was the Loon Lake Winter Nature Trail which is also used as a cross-country ski trail. I did not expect to get very far along the 2.4 km trail, but that was not the purpose of the outing.

The trail was packed down but the snow was soft and deep alongside it. The first thing my son, Tim, did was to step off the trail and sink into the snow. I brought my binoculars and a bird field guide which my son wanted to hold. He knew we were looking for "birdies" and he tried to hold the binoculars for a while but they were too heavy for him.

I had heard some birds calling when we first arrived but all was quiet now. We spent some time looking at the different shapes the tree shadows made on the snow. My son spotted the first bird, which might have been a Pine Grosbeak, followed by some species of chickadee (Boreal or Black-capped). His eyes

were soon eagerly scanning the tree-tops for more birds. A Red Squirrel chattering away at us from a Jack Pine caught our attention. We went to the tree and I showed Tim the feeding site where the remains of cones were scattered around. He soon spotted other piles around the tree. An old bird's nest was right above our heads and again Tim's eyes caught another nest further up the tree which I had missed.

We explored along the trail, passing through stands of tamarack, paper birch, spruce and Jack Pine. A beer bottle was sticking out of a branch along the trail and Tim said, "That's not nice, right Mom?" I told him he was right. We explored the trail and looked at conks, woodpecker holes in an aspen and last year's sap on the trees by the trail. We soon made a game out of who noticed a hole or conk first.

It was getting late and Tim was also tiring so I made a beeline for the road through the deep snow. It was 30 m away and by the time we reached the road all my son had to say was, "Oh, my legs." As I laughed my way down the road, I thought it was just the right note on which to end a wonderful outing. The experience proved to be very valuable in exposing a young child to the enjoyment that could be derived from nature and the outdoors.

OBSERVATIONS ON THE AMERICAN WHITE PELICAN

MILES CONSTABLE, Environmental Protection, Room 210, 2nd Floor, Twin Atria 2, 4999 - 98 Avenue, Edmonton, Alberta. T6B 2X3

While doing a limnological survey on Primrose Lake, Alberta, I noted several interesting behavioural traits of the American White Pelican. I worked on the survey in 1980 and 1981 to characterize the limnology of Primrose and Cold Lakes. There is a large pelican colony that nests, in part, on a set of small islands in the north end of Primrose Lake (within the bombing range). The survey was conducted every second weekend from May through October, so I had

ample opportunity to observe pelicans from close range.

The first behavioral trait that I noticed was that a line of flying pelicans would not cross over a boat, whether it was moving or stationary. Our water sampling transects frequently intersected lines of pelicans flying to or from the colony. Lines of pelicans flying back to the colony changed heading to avoid our stationary boat. After a while the behaviour intrigued



Pelican colony

me, so I attempted to drive the boat under a line of flying pelicans. The birds actively avoided passing over the boat and this avoidance manoeuvring varied from a slight adjustment in heading if our boat was a fair distance away, to abrupt turns if our boat was very close to passing under them. One line of pelicans reversed course to avoid passing over the boat and went back around the boat to get to the colony. The reason for this avoidance was not clear, although hunting pressure outside the bombing range may be a cause. I cannot recommend this approach for other people as pelicans have enough problems with declining populations without even well-meaning people harassing them.

The second behavioural trait that I noticed was in how a line of flying

pelicans coordinated their flying to gain altitude. The lead bird would start flapping to gain altitude; at roughly the point where the lead pelican started flapping the second would start flapping; and so on down the line. It appeared that the line of pelicans had reached a "step" in the air that they all had to "mount" as they came up to it. The result was an undulating line of pelicans that never failed to attract my attention.

Before the survey I had little contact with these lovely birds. After watching them for two summers on Primrose Lake I must say that they are some of my favourite birds to watch. Unfortunately for bird watchers, and fortunately for pelicans, they live in rather remote areas and it usually requires a boat to get close to them. I hate boats.



Anybody who has been around the woods knows that morning smells one way, high noon another, dusk still another, and night most different of all, if only because the skunks smell louder at night. Morning smells fresh and flowery and little — breezy, and dewy and spanking new. Noon smells hot and a little dusty and sort of sleepy, when the breeze has died and the heads begin to droop and anything with any sense goes off into the shade to take a nap. Dusk smells scary. It is getting colder and everybody is going home tired for the day, and you can smell the turpentine scars on the trees and the burnt-off ground and the bruised ferns and the rising wind... And in the night you can smell the fire and the warm blankets and the coffee a-boil, and you can even smell the stars. *Robert Ruark, 1957. The Old Man and the Boy. Holt.*

NORTH AMERICA'S OLDEST GREAT HORNED OWL

C. STUART HOUSTON, 863 University Drive, Saskatoon, Saskatchewan.
S7N 0J8

From 4,651 flightless Great Horned Owls banded through 1987, there have been many interesting recoveries. For four years, one of these held the record longevity in the wild for a banded Great Horned Owl — 13 years, 6 months. I had banded this owl in a nest found by Bill Horseman at Bredenbury, Saskatchewan, on 17 May 1959. It was caught in a trap at Roblin, Manitoba, on 4 December 1972. The longevity record was next surpassed by an owl banded by D. Seal of Rockford,

Illinois, that was found freshly dead not far away, 17 years and four months after banding.

Among the 262 nestling Great Horned Owls I banded in 1967, a "build-up" year in the ten-year cycle of the Snowshoe Hare, there have been some remarkable longevity records. Of my 367 recoveries from Great Horned Owls banded in Saskatchewan, 169 occurred in the first eight months, and 213 in the first year (Houston and Francis, mss.);

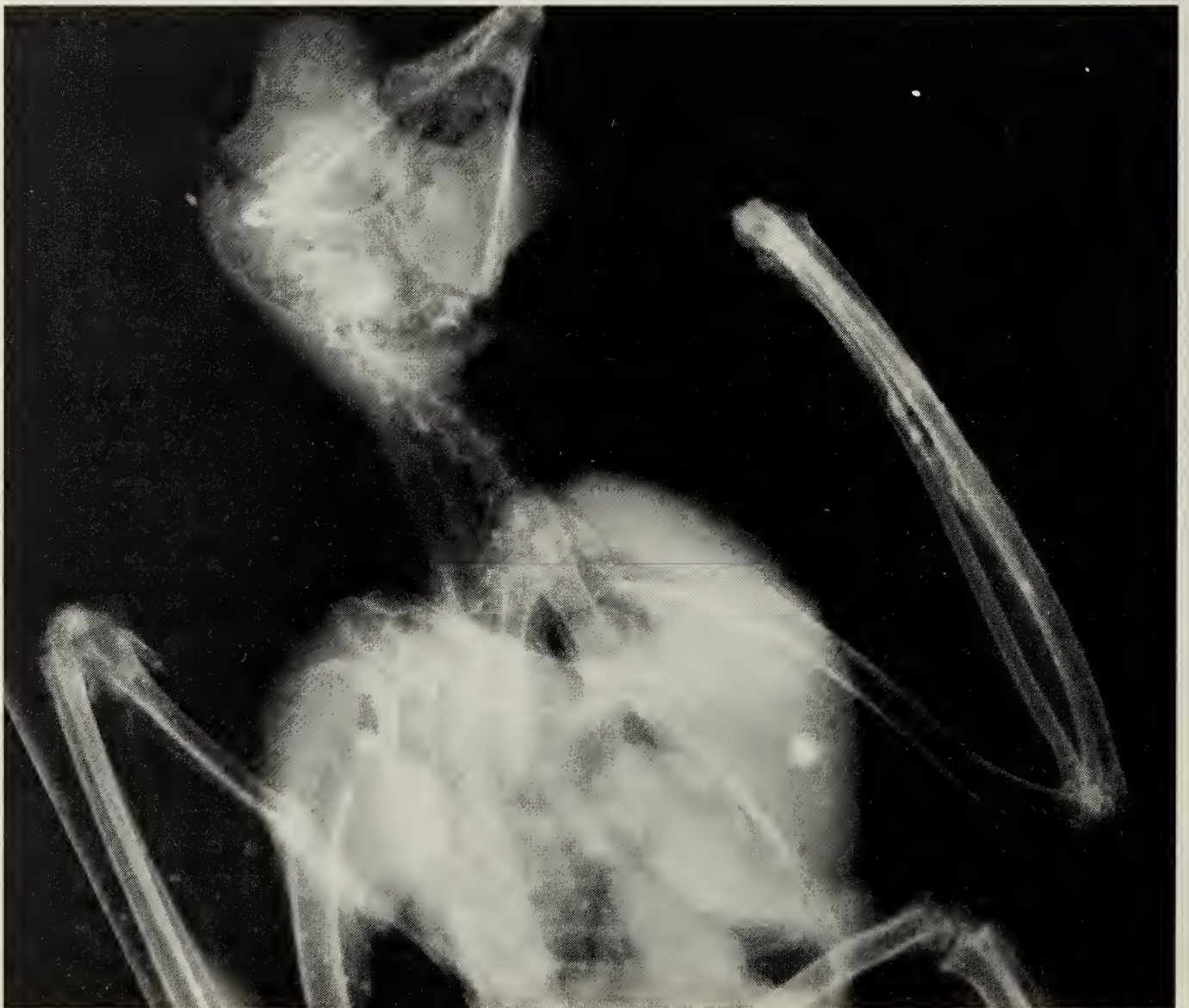


Figure 1. Radiograph of owl skeleton.



Figure 2. Hal Fleischhaker's mounted owls.

Mary Houston

1967 has provided more longterm survivors than any other banding year to date. This included one owl each at 5, 6, 7, 9, 16, and 17 years of age. The owl banded with tag 518-60395 was banded near St. Benedict on 14 May 1967 and was hit by a motor vehicle near Hendon on 30 July 1983, when 16 years, 2 months old. Another owl (518-60341) had been banded in its nest near Saskatoon 10 May 1967 and found freshly dead near Delisle, Saskatchewan, 17 June 1984, when 17 years, 1 month old.¹

The longest survivor was 518-60626, one of two nestlings in a nest built a year or more earlier by a Red-tailed Hawk, 29 feet above the ground in a Trembling Aspen on the southwest quarter of Section 17, Township 35, Range 1, west of the 3rd Meridian, west of Elstow. This location is entered in the banding computer on the Patuxent Refuge at

Laurel, Maryland, near Washington, D.C. The nest was found by Jon Gerrard, a keen university student, now a medical researcher at the University of Manitoba and co-author of *Bald Eagle: haunts and habits of a wilderness monarch* published by Western Producer Prairie Books, Saskatoon, in 1988. When Jon and I visited the nest it contained a Northern Pocket Gopher as uneaten food and one addled owl egg.

The owl 518-60626 was 20 years, 8 months old when it was killed by a truck on Highway 5, 9 mi east of Highway 41. I contacted the finder, Hal Fleischhaker of Humboldt, and learned the exact location of its demise, where an entry lane joined the highway in the southeast quarter of Section 2, Township 37, Range 3, west of the 3rd meridian. This is in the quadrant 520-1061, named "South of Aberdeen, Saskatchewan." The owl was in such fine shape that

Hal took it to conservation officer J. Ray Little in Humboldt, to receive a permit to get it mounted. Hal had to prove that the owl had not been shot. The local veterinarian took a radiograph of the owl skeleton (Figure 1). Later the bird was mounted. My wife, Mary, took this photo of Hal's two mounted owls in his home six miles north of Humboldt (Figure 2).

For about two years this owl held the record longevity for North America, and was so acknowledged in a compilation of longevity records published in 1989.² Unfortunately, through an error in reading an adjacent line on the computer printout, this citation cited the banding location incorrectly as "Lanigan, Sas-

katchewan." The record was soon eclipsed by two even older owls from New York state and then far exceeded by the Manitoba owl reported in this issue by R.W. Nero. These long-lived owls are rare exceptions, but after I cease my full-scale owl banding after the 1992 season, I can look forward to occasional recovery records for at least another 20 years to come.

1. HOUSTON, C.S. 1985. Longevity of Saskatchewan birds. *North American Bird Bander* 10:66-67.
2. KLIMKIEWICZ, M.K. and A.G. FUTCHER. 1989. Longevity records of North American birds. Supplement No. 1. *J. of Field Ornithol.* 60: 469-494.



All these cattle are of one color, namely brown, and it was a great marvel to see a white bull in such a multitude. Their form is so frightful that one can only infer that they are a mixture of different animals. The bulls and cows alike are humped, the curvature extending the whole length of the back and even over the shoulders. And although the entire body is covered with wool, on the hump, from the middle of the body to the head, the breast, and the forelegs, to just above the knee, the wool is much thicker, and so fine and soft that it could be spun and woven like that of Castilian sheep. It is a very savage animal, and is comparably larger than our cattle, although it looks small because of its short legs. its hide is the thickness of that of our cattle, and the native indians are so expert in dressing the hides that they convert them into clothing. *Don Juan de Onate. 1601. True account of the Expedition of Onate Toward the East.*

NEW GREAT HORNED OWL LONGEVITY RECORD

ROBERT W. NERO, Box 14, 1495 St. James Street, Winnipeg, Manitoba.
R3H 0W9

Avian longevity records based on banded bird returns in the files of the U.S. Bird Banding Laboratory, Laurel, Maryland, have been compiled and published several times, the most recent update appearing in 1989.¹ The oldest record given for a Great Horned Owl is 20 years, 7 months. That bird, banded by C. Stuart Houston (who else?) on 20 May 1967 as a nestling near Elstow, Saskatchewan, was found dead on 18 January 1988 at Saskatoon.¹

An injured, banded Great Horned Owl found on the grounds of the Assiniboine Park Zoo in Winnipeg on 6 January 1992 extends the longevity record by several years. Zookeeper Jacquie Randall, a volunteer wildlife rehabilitator, found the owl moving about with difficulty on the ground not far from Corydon Avenue. She obtained a net and attempted to capture the bird but it managed to fly up onto the roof of the Tropical House. An hour later, Jacquie found the bird back on the snow-covered ground and was able to capture it. She took the bird to the zoo hospital where it was examined by Dr. Gordon Glover and Janis McCarthy, both members of the Manitoba Wildlife Rehabilitation Organization. They concluded that the bird, noticeably thin and in a weakened condition, had been in collision with a moving vehicle. The nature of its injuries — chiefly a fractured orbital bone and a grossly dis-

tended eyeball — led them to euthanize the bird.

Because the bird was banded, contact was made with Garth Ball, Manitoba Wildlife Branch. Through contacts in Ottawa, Ball discovered that the band (No. 568-17752) had been reported by band permittee Harold V. Hosford as having been placed on a Great Horned Owl on 20 December 1964. Hosford, now in retirement in Victoria, B. C., then lived at 4116 Roblin Boulevard, not far from where the bird was found. Hosford indicated that the bird had been captured nearby by Matt Dedrick. Dedrick remembered the incident well and within a few days brought his field notebook to me. This bird had been captured overnight in a drop-trap baited with a live pigeon in Dedrick's backyard at 669 Fairmont Road, just a few blocks from Hosford's former home.

The bird was removed from the trap on the morning of 20 December 1964 and taken to Hosford's house for banding. Hosford was away, but a band from his series was placed on the bird and it was then released. Dedrick's notes include mention of this bird being a "small to medium adult female." Judging by his detailed notes and comments, there had been no noticeable colour change in the plumage of this bird. The bird weighed "3.9 pounds" when

captured. Interestingly, the same bird was recaptured in the same trap in Dedrick's backyard on 24 December 1966. Its weight then was recorded as "4¼ pounds."

If this bird was hatched in summer 1963, which would mean it was an adult when first captured on 20 December 1964, then it would have been 28 years in summer 1991. Its minimum estimated age when captured on 6 January 1992 would therefore be 28 years, 7 months. It is possible that it was even older.

There is something appealing in contemplating the existence of a bird in the wild beyond the usual life

span. So many things can happen to a bird. The survival of one owl for 28 years is impressive. This one record shows the potential — if all goes well. That this individual should have maintained itself in an urban environment is perhaps especially remarkable. Great Horned Owls are known to have nested in Assiniboine Park, so this bird could have been on its nesting territory. Clearly, if adequate habitat is preserved or developed, the urban setting can provide room for raptors.

1. KLIMKIEWICZ, M.K. and A.G. FUTCHER. 1989. Longevity records of North American birds. Supplement No. 1. *J. of Field Ornithol.* 60:469-494.

NOTICE

REQUEST FOR REPRINTS ON OWLS

Authors of articles or publications dealing with owls and wishing them to be listed in the second edition of a *Working Bibliography of Owls of the World* are asked to send reprints to:

Richard J. Clark
The Owl Bibliography
c/o Department of Biology
York College of Pennsylvania
York, PA USA
17405-7199

WHERE DO CANADIAN BURROWING OWLS SPEND THE WINTER?

PAUL C. JAMES, Museum of Natural History, Wascana Park, Regina, Saskatchewan. S4P 3V7

The Burrowing Owl is currently classified by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as threatened. This means that it is likely to become endangered if the factors affecting its vulnerability are not reversed. Many such potential factors have been identified including habitat loss, pesticides, and other types of mortality, and studies are now underway in Canada in order to evaluate these limiting factors.^{1,3} While Canadian Burrowing Owls are migratory, very little is known about their migration routes and wintering areas.² This is obviously a critical weakness because the limiting factor(s) affecting their population may be operating at those times of the year. It is generally assumed that these Canadian Burrowing Owls spend the winter in the southern United States; however, I present evidence here to show that the Canadian population is probably spending the winter south of the United States.⁴

Methods I obtained all North American banding and band-recovery data (up to and including 1987) for Burrowing Owls from the Bird Banding Office in Ottawa and extracted the following information:

1. The total number of owls banded in Canada.
2. The total number of owls banded

in the United States.

3. The number of Canadian-banded owls recovered in the United States from November to February inclusive.

4. The number of American-banded owls recovered in the United States from November to February inclusive.

Assuming that Canadian owls spend the winter months in the United States, their recovery rate there during the four winter months should be more or less the same as for the American-banded owls. If it is not, then Canadian owls must be travelling further south into Central America for the winter.

Results Of 2,512 American-banded Burrowing Owls 25 (1%) have been recovered in the United States from November through February. In sharp contrast, not one of 1,701 Canadian-banded owls has been recovered there during this period. This difference in recovery rates between the Canadian and American birds is significantly different ($X^2 = 17.05$, $P < 0.005$). Three Canadian-banded owls have, however, been recovered at other times of the year in the United States (Figure 1). One was recovered in Nebraska in September; the Texas owl was recovered in October; and the Colorado owl in April.

Discussion The significant difference between the recovery rates of Canadian-banded and American-banded Burrowing Owls in the United States during November to February supports the suggestion that Canadian owls are wintering in Central America. If so, then a greater urgency exists with respect to the discovery of their wintering grounds as Central America is facing tremendous conservation problems. Based on this, I suggest that the three Canadian owls recovered in the United States were migrating

birds, two going south and one coming north.

Further support for the suggestion that Canadian Burrowing Owls are wintering in Central America comes from the fact that three American-banded owls have been recovered during November to February in Mexico. These owls originated in California, Utah, and Oklahoma, respectively. If the principles of "leap-frog" migration hold for Burrowing Owls, then we might also expect the more northerly-breeding Canadian



Figure 1. Recoveries of Canadian Burrowing Owls from the United States. The numbers denote the month in which the recovery was made.

birds to winter further south than the American owls.⁵ That we have yet to receive a banding recovery of a Canadian owl from Central America is likely due to the lower probability of receiving a return from this region.

Clearly, greater emphasis needs to be placed on banding Burrowing Owls in Canada in order to increase the chances of recoveries being made further to the south. In addition, it might be useful if a Burrowing Owl banding program was started in Mexico during the winter. In any event, it would appear that greater cooperation is required between Canada and the countries of Central America with respect to Burrowing Owl conservation.

Acknowledgements

I thank Ann Demers of the Bird Banding Office in Ottawa for providing access to their Burrowing Owl banding information. My studies on

Burrowing Owls have been supported by the Canadian Wildlife Service, World Wildlife Fund, and FMC Corporation of Canada.

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To the labourer in the sweat of his labour, the raw stuff on his anvil is an adversary to be conquered. So was wilderness an adversary to the pioneer. But to the labourer in repose, able for the moment to cast a philosophical eye on the world, the same raw stuff is something to be loved and cherished, because it gives definition and meaning to his life. This is a plea for the preservation of some tag-ends of wilderness, as museum pieces, for the edification of those who may one day wish to see, feel, or study the origins of their cultural inheritance. *Aldo Leopold, 1949. A Sand County Almanac. Oxford.*

TOLERANCE OF SHORT-TERM DISTURBANCES BY SHARP-TAILED GROUSE

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Sharp-tailed Grouse dancing grounds in the Saskatoon area were surveyed in 1970-73 and 1988-90 for information on sites and their use. During 326 site visits, many instances were noticed of the birds' reactions to a variety of short-term distractions during their lek (dancing) activities. Though not central to the study, these incidental observations of behaviour were noted.

A characteristic of the Sharp-tailed Grouse is the lek gathering, a noisy event bringing male sharptails together for a least four hours each day during more than ten weeks in spring. The site, which may be used for years, is in the open on elevated terrain with short cover; the dancing ground is crowded with small territories and the birds are fully exposed. Yet when off the grounds, sharptails are solitary and secretive most of the time, living and nesting in or near margins around patches of buckbrush and aspen bluffs, where long grasses provide cover and food — this basic behaviour and corresponding habitat are the opposite to those assumed for the lek.

Typically, regardless of the cause of distraction, I found the grouse froze, then if flushed they dispersed over a broad area. They landed up to 200 m away on lower ground and in taller vegetation, and this tendency prevailed even on a "flat" field where

elevational differences were slight. That is, when fleeing they reverted to the basic behaviour. In effect, a short-term distraction shifted the balance between urge to congregate and display and urge to flee and disperse.

Usually, within five minutes after the disturbing element disappeared or became innocuous (e.g., a stopped car), the birds returned individually. After pausing briefly, they dashed to their territories and resumed dancing. An exception could occur when it was late in the morning, generally after 8:00 a.m., depending on the point in the season. Then the birds left in a flock, rather than dispersing, going farther before landing, and not returning. They were off to feed and rest.

The short-term distraction to which reactions were noted were due to other wildlife, cultivation, construction, weather and human interference. Except for three reports by others, the reactions described are those I witnessed when the birds were under the worst scenario conditions observed for each of these categories.

Grouse interaction with other birds at the grounds were seen only 16 times. The grouse flushed when a Great Horned Owl flew low over one site and when a Red-tailed Hawk



Dancing male Sharp-tailed Grouse

flew low over another. Twice, overflying Long-billed Curlews caused the sharptails to freeze. Although they reacted to the curlews, they ignored godwits. One time when a Peregrine Falcon buzzed — but did not stoop — the birds did not flush, yet another time they did.

While undertaking research on Sharp-tailed Grouse, Wayne Pepper several times saw the birds flush when a female Northern Harrier flew over, but not when the smaller, light-coloured male went by (pers. comm.).

When I was driving toward a site, a Red-tailed Hawk flushed from the middle of the grounds, and in springing up, the hawk kicked or dropped an object. This turned out to be a still-warm, partly-torn sharp-tail carcass. No grouse were in sight but they returned as I withdrew. This was the only instance observed of appar-

Four Winds Prairie Photography

ent avian predation of grouse on dancing grounds.

The only grouse-mammal interaction witnessed turned into a non-event. A coyote approached from the far side of the field, trotting toward the grouse site, but on reaching the grounds it veered, skirting the flock by 20 m. Neither coyote nor birds paused. Seemingly, the coyote was not hungry and the birds sensed it.

Cultivation of only the dancing site, as distinct from breaking up nesting and feeding habitat, does not appear to have a significant long-term effect. Many of the active grounds in the Saskatoon district are on cultivated land. The act of cultivation, however, can be a potential short-term distraction.

Unless there had been late fall cultivation, the soil surface was usually fairly smooth when dancing resumed



Sharp-tailed Grouse

Lorne Scott

in late winter, but could be exceedingly rough following spring tillage. Cultivation itself was not a deterrent, the birds withdrawing only while equipment was actually working across the site (two observations). With tillage, each bird's small territory became a miniature moonscape. The grouse seemed as active as ever, but with all the stomping and running, there must have been an extra energy drain, although the activity soon smoothed the surface. By chance, three sites were visited just before and after the land was worked on two grounds the number of birds was the same and on the third there were two more birds present on the second visit than during the first (movements of individual birds between grounds can occur daily).

One of the grounds found in an overgrazed pasture in 1989, when a dry spring followed a dry year, was revisited a week later. The sight then

was a shocker — the land had been broken, exposing the light sandy soil, which was drifting in the moderate breeze. The result was a ground blizzard of dust, yet 150 m into the field the birds were still dancing. Only the white tail flags could be seen, and sometimes even they disappeared in the swirling dust. In the head-down, hunkered posture of the dance, the birds' nostrils and eyes would be within eight cm of the surface, and conditions can be imagined.

The reappearance of Russian thistle during the drought of the late 1980's produced another distraction for grouse with dancing grounds on cultivated land. On one field, again on light sandy land which should never have been broken, the previous year's failed wheat crop still stood, and mixed with it was a heavy growth of Russian thistle. Tracking the previously unrecorded grounds was done entirely by sound since the

birds could not be seen. I walked to within 25 m, much closer than usual, before they saw me and flushed. Thistles were scattered through the grounds and bird droppings beneath tumbling weeds indicated that territories were being rearranged whenever the wind blew. As the typical site provides such a clear view all around, with resulting ease in spotting a predator, it was surprising that the birds had not moved into a pasture a mere 50 m away. This observation called into question my earlier view that safety was a dominant element in site choice.

When the highway near Tessier was under construction, road equipment cut away half a knoll and a third of the dancing grounds situated on it. During my visit, machines were moving nearby, yet grouse were present.

With caution, a car can be driven up to a grounds without the birds flushing. Once when leading a natural history field trip, I approached the site too fast and the birds flushed. Knowing they would come back I continued, but misjudged the distance in the dawn gloom and ended up with seven cars abreast across the middle of the grounds. When the birds returned and resumed activity, presumably where each had been before scattering, the result was: one danced behind a car, another performed between two vehicles, a third went beneath a car where he was heard stomping, and a fourth flew up onto a car hood and simulated a slide and glide routine.

Weather anomalies, of course, are potentially distracting, but my observations were confined to the effects of wind. Breezy days were avoided because pinpointing sharptails was done by listening. Yet, it was not uncommon at sunrises in spring for the

wind to rise, and if I was in the field at such times, I confined my attention to known sites. In strong gusty winds there were lengthy spells of inactivity by the birds and sporadic flushing occurred, but the sites were not deserted.

One farmer reported that he heard dancing sounds coming from a ground near his yard during a heavy snowfall. (How do sharp-tails cue in to the precise location when the land is covered with snow?) Vic Harper saw sharp-tails dancing in water after a quick thaw left small puddles on the still-frozen soil (pers. comm.). Since the dancing stage of lek activity involves rapid stomping while wings are extended and arched downward, water would be splashed up into the birds' faces and axillars (wing-pits). Aside from wind, weather appeared to have little influence on lek activity, although situations during blizzards and downpours may be different.

A person walking near a ground is another short-term distraction. Sharp-tails usually flushed when I walked within 50 to 150 m of them, but ordinarily returned following my retreat. It was unclear why one flock would tolerate a much closer approach than would another.

An acquaintance wishing to photograph grouse at dawn, went to the site in late evening and crawled into his sleeping bag for the night. He had misjudged his situation, as he found out when he was awakened before daybreak by grouse dancing on him.

The most extraordinary behaviour occurred on an April day, in the peak dancing period. The dancing ground was near the road, only 25 m into a pasture, and as the birds were in

sight, I approached slowly and stopped opposite them. Meanwhile, a bird flew out of the grounds, ran across the pasture, through the ditch and up onto the road to the car. He started pecking the hubcap. Some of the flock continued dancing, others froze in the erect alarm posture. I took a count and made notes, the pecking continued, then left for another site, returning in 20 minutes. A bird, presumably the same one, again came running toward the car. Both times he charged in the dancing threat: neck extended, head down, body horizontal, tail erect and wings

decurved. This is the same posture adopted by a male confronting another at their mutual territory boundary. Evidently the car was being challenged.

Collectively, these random observations show the considerable tolerance Sharp-tailed Grouse on their dancing grounds have for a variety of short-term disturbances, including apparently severe ones resulting from cultivation. They demonstrate how strong the attachment is for the lek site and indicate the set pattern the birds follow when reacting to disturbances.

DO CROWS (C)AW IN CREE?

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In his article "Crows and their (c)awing" (*Blue Jay* 49:123-125), Victor Friesen cites a fascinating array of sources on the question of whether crows say *caw* or *aw*. There is an additional source that has a bearing on this question. It is a source very relevant to Saskatchewan crows and older than any other source cited by Friesen — the Saskatchewan Cree.

Many bird names in the Cree language are onomatopoeic, that is, they imitate the sound that the bird makes. (An example in English is the name "Chick-a-dee.") This is true for the Cree name for crow which is *Ha-ha-siw* or *A-ha-siw*. The "siw" ending of this word indicates "bird," and the name means roughly "the bird that says *ha-ha* or *a-ha*." This places the Cree clearly in the *aw* camp for crows, but interestingly enough, the Cree name for the raven, also onomatopoeic, is *Ka-ka-giw*. (I am not sure what the "giw" ending here signifies.)

Some other onomatopoeic bird names in Cree are *piskwa* and *kas-*

kas-kus-kee-ka-chas. I will not tell you what these are as it might be fun to try to guess them by the sound. The second one should not be too difficult for people who know the bird's song. Hint: the fourth syllable is raised in pitch and drawn out longer than the others and the fifth and sixth syllables fall rapidly from the fourth.

Some Cree bird names are descriptive of the bird's appearance or behaviour rather than the sound it makes. Two examples are, in English translation, "little raven" and "raven duck." Can you guess what birds these refer to? [See page 128 for the answers to these questions.]

This information is from my own experience with Cree speakers in northern Saskatchewan. Bird names, a lively part of the Cree language still spoken extensively in parts of the province, have not been collected in any one place that I know of, although some bird names do occur as entries in the various dictionaries of the Cree language.

PEREGRINE FALCON IN MANITOBA — AN HISTORICAL PERSPECTIVE

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Winnipeg has attracted attention recently because a pair of Peregrine Falcons nested for three consecutive years on the Delta Winnipeg Hotel as a result of U.S. and Canadian re-introduction efforts. This paper, however, deals exclusively with historic occurrences predating the Peregrine Falcon recovery project in Manitoba.

Since the earliest recorded sightings, the "Duck Hawk" or Peregrine Falcon in Manitoba is referred to as either a transient, occasional winter visitant or occasional summer resident. Although definite breeding records were lacking, it probably bred sparingly as it was recorded in summer.⁴ The present note records some breeding for the period prior to 1981.

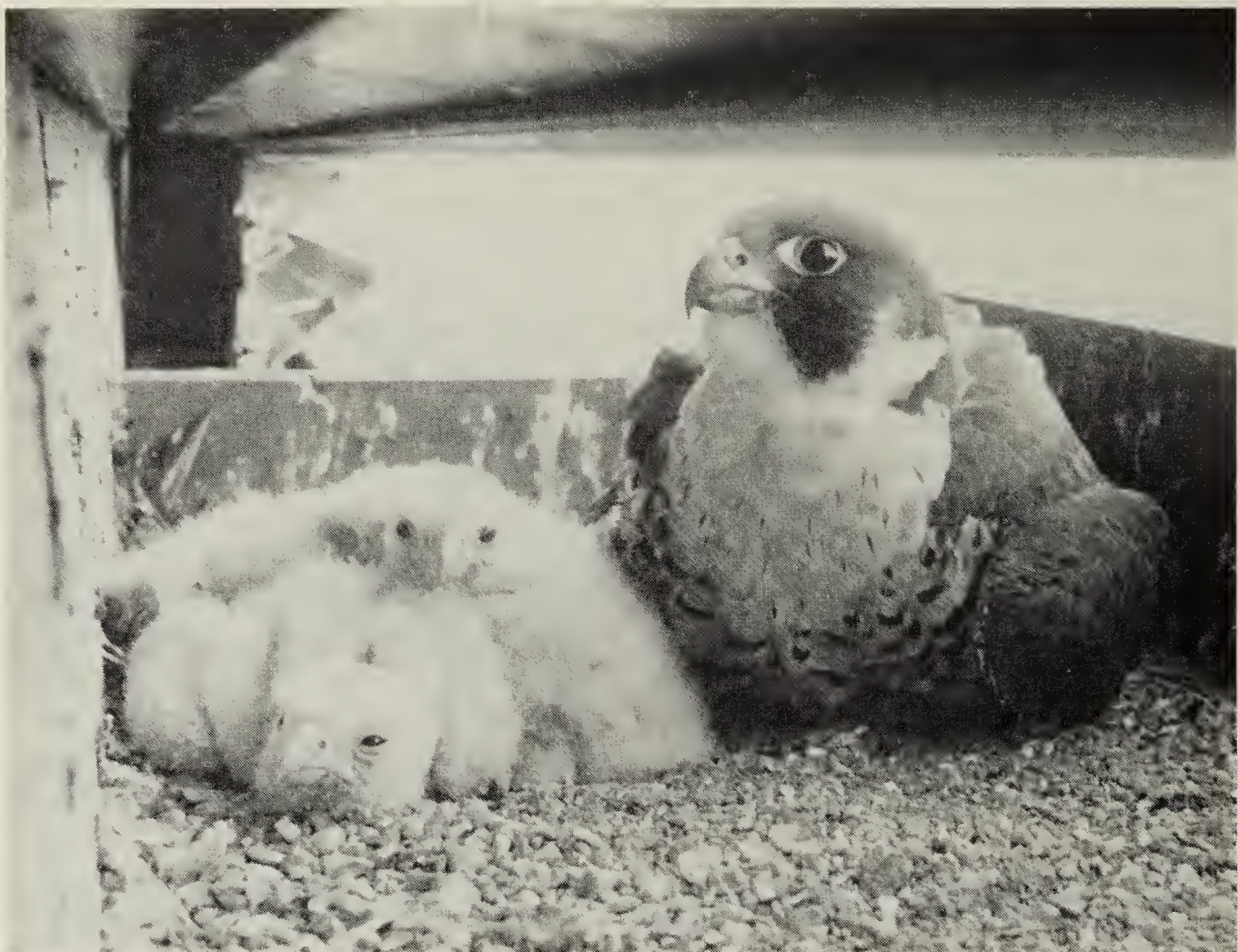
Northern Manitoba As early as 1880, Bell recorded a male peregrine, and Macoun listed two specimens obtained from York Factory (Figure 1).⁹ Taverner and Sutton called the peregrine at Churchill "a fairly common transient and summer resident; probably nests in suitable localities."¹¹ Although they did not find evidence of breeding, birds were seen and collected between 27 May and 11 June, and an adult male was regularly observed during the last week of June and the first two weeks of July in the Churchill area.¹¹

Jehl and Smith stated that although few records exist for the Churchill area, migrant peregrines usually arrive from 6 to 18 May and depart between mid-August and mid-September.⁷ "The virtual absence of summer records in recent years indicates that peregrines no longer breed in the Churchill area. Perhaps they nested as late as 1957, when Mrs. Beckett observed a pair courting near Cape Merry."⁷ In Bechard's review of historic nesting records, he states that only presumptive evidence exists that peregrines once occupied suitable sites along the Hudson Bay near Churchill.¹

A Peregrine Falcon nesting habitat evaluation was conducted for northern Manitoba in 1990.² Although no peregrines were observed, 33 potential nesting cliffs were recorded over the 3,438 km route.

Central Manitoba Shortt and Waller reported that the Peregrine Falcon was not common, but was well known to the Indians of Lake St. Martin who claimed to have found its nest on the limestone ridge at the north end of the lake.¹⁰

In "Chickadee Notes" (1948, No. 1400), Lawrence described peregrines nesting near Grand Rapids, and near Minaki, Ontario. Valentine McKay indicated strong understand-



Peregrine nesting on Delta Winnipeg Hotel, 1989

Robert P. Taylor

ing of the Peregrine Falcon's hunting habits and nesting behaviour. He goes on to describe several locations. "Owing to the Duck Hawk's habit of always nesting on an inaccessible ledge of a perpendicular cliff, it is hard for one to look into the nest to examine the contents. These hawks nest every summer on the limestone cliffs of Pony Island, near Selkirk Island, Lake Winnipeg and also just above the Demichage Rapids, where there is a high bluff called Anchor Point. Last summer [1947] I saw a nest on a ledge of a perpendicular limestone cliff near the Gill River on Lake Winnipeg. Both hawks were greatly excited and antagonistic to our presence and swooped down on us several times in a curve directly below the cliff. I presume that anyone trying to invade their nesting site would meet with violent opposition."⁸ (There were 35 other records in "Chickadee Notes." Table 1)

Western Manitoba There were several reports of migrating peregrines in the late 1800s, and migration records were listed for Portage la Prairie, Carberry and Two Rivers. One Peregrine Falcon was collected in its first plumage on 26 July 1884 near Carberry.¹³

O.G. Turner, Jr. collected two Peregrine Falcon eggs on 20 May 1887, from a nest 13.3 m above ground on the ledge of a small cliff near Gladstone, Manitoba. These eggs are in the museum collection of the Western Foundation of Vertebrate Zoology, California. Egg size could not be used for identification since eggs of Peregrine Falcons are similar to those of Prairie Falcons. However, Bechard reported that the dark red colour of the eggs was typical of Peregrine Falcons so he judged the identification to be valid.^{1,6} It can be argued that a 13.3 m cliff near Gladstone, especially downstream along

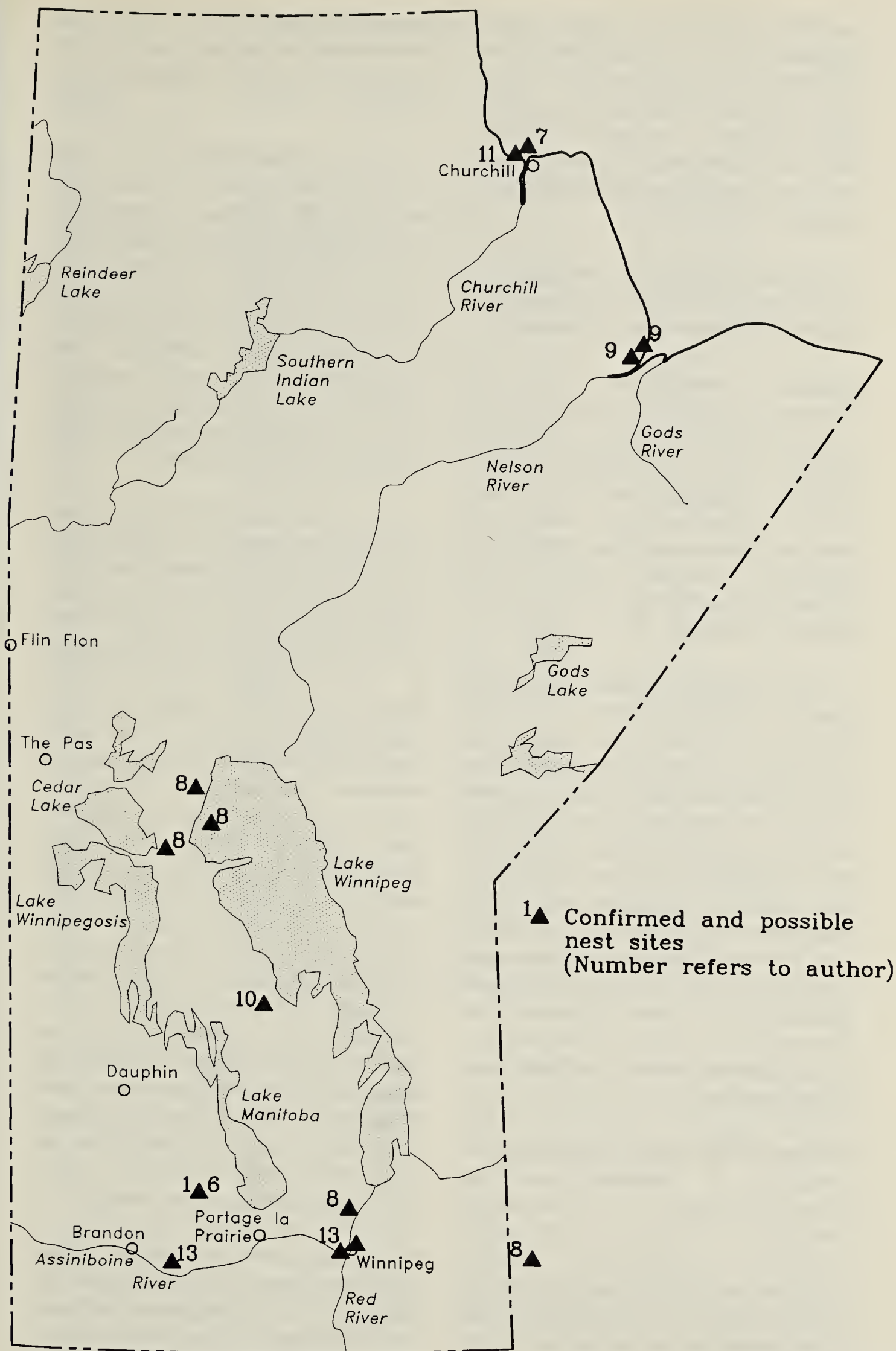


Figure 1. Confirmed and possible *Peregrine Falcon* nest sites in Manitoba.

the White Mud River, is not feasible. However, 20 km west and northwest of Gladstone, the topography is certainly rugged enough, supporting steep elevation changes of greater than 15 m along the course of creeks and other sites. The eggs were likely collected in this area.

Hochbaum called the peregrine an uncommon spring and fall migrant in the Delta Marsh region of Manitoba.⁵

Eastern Manitoba In the Pinawa-Lac du Bonnet area, Taylor classified the peregrine as a rare transient and occasional winter visitant. He suggested that it was unlikely peregrines had ever bred here as limited historical records of sightings occurred only during migration (i.e., 20 April-13 May; 31 August-1 October).¹²

A.G. Lawrence however, observed potential nesting locations in nearby Ontario and at least one active nest ("Chickadee Notes," No. 1400). "On the prairies, the Duck Hawk is noted usually in spring and fall following the migrating flocks of ducks and shorebirds, but we have found it in summer dwelling amongst the rocky headlands of the Lake of the Woods and Winnipeg River, and have seen a brood just out of the nest (first reported by W. Adams, Winnipeg) on Thompson's Island, near Minaki, Ontario," 33 km east of the Manitoba-Ontario border.⁸

Southern Manitoba Hine called the peregrine a "tolerably common summer resident" in the Winnipeg area.¹³

Lawrence ("Chickadee Notes," No. 497) mentions an immature peregrine being captured while asleep on a window sill of the Winnipeg Hydro warehouse on Arlington Street by P.

Stewart in September, 1930 (Table 1). It was photographed, banded and released. The photo appears in his column.⁸

In "Chickadee Notes" No. 1569, Lawrence wrote about an outing by the Manitoba Museum Association and the Natural History Society during the second week of June 1951, in which apparently a pair of peregrines was seen in the Stony Mountain area. They observed one peregrine kill and carry away a shorebird. "It was probably a female Duck Hawk as a male was seen over the slough in the afternoon."⁸

According to L.T. Simmons, a pair of peregrines nested on a ledge near the top of the King Edward Municipal Hospital on Churchill Drive overlooking the Red River about 1960. The late Jack McIntyre, then administrator of the hospital, told Simmons about the nesting at a time when the birds were still present. He swore Simmons to secrecy in the belief that otherwise the birds would be disturbed. Simmons said he saw two downy chicks resting on the bare bricks of the ledge which was at the southeast corner of the building overlooking a vegetable garden. Simmons said he saw pieces of pigeon remains scattered on the nest ledge, especially sections of the forewing. The ledge was "messy" so that the chicks were not altogether resting on bare brick. Simmons saw the nest ledge with the two young on two separate occasions, with the chicks in both downy and advanced states (R.W. Nero, pers. comm., 1989).

Simmons also said that a single peregrine took up residence for some time at the Legislative Building in the 1930s, roosting daily on the ledge at the base of the Golden Boy. Grant Churcher, who ran the

Table 1: PEREGRINE RECORDS IN MANITOBA 1921-55
IN "CHICKADEE NOTES" BY A.G. LAWRENCE

Column Number	Location	Date d/m/y	Observer
10	Gimli	23 May 1921	C.G. Harold
33	Aweme	28 Sep 1921	N. Criddle
113	Oak Lake	14 May 1923	H. Battersby
163	Whitewater Lake	30 Apr 1924	C.G. Harold
217	Oak Lake	16 May 1925	H. Battersby
268	Oak Lake	04 May 1926	H. Battersby
317	Portage la Prairie	17 Apr 1927	James Cowan
318	Oak Lake	17 Apr 1927	H. Battersby
319	Treesbank	26 Apr 1927	N. Criddle
369	Hillside Beach	05 Apr 1928	F.J. Rogers
371	St. Vital, Winnipeg	20 Apr 1928	H. Mossop
372	Oak Lake	10 May 1928	H. Battersby
378	Winnipeg	24 May 1928	L.T.S. Norris
425	St. Vital, Winnipeg	11 May 1929	H. Mossop
427	Oak Lake	16 May 1929	H. Battersby
479	Delta	24 May 1930	C.L. Broley
497	Winnipeg	24 Sep 1930	P. Stewart
577	Winnipeg area	10 Apr 1932	R.M. Watt
578	Hillside Beach	09 Apr 1932	F.J. Rogers
631	St. Francois Xavier	17 Apr 1933	C.L. Broley
683	Whitemouth	22 Apr 1934	V. Latta
688	East Bay	24 May 1934	E. Robinson
719	Virden	23 Dec 1935	J. Pritchard
739	Hillside Beach	18 May 1935	F.J. Rogers
786	City Park, Winnipeg	29 Mar 1936	R. Tidmus
844	Whitemouth	12 May 1937	V. Latta
1052	East Bay	19 May 1941	E. Robinson
1207	Delta	30 Apr 1944	H.A. Hochbaum
1250	Rosenfeld	? Sep 1944	T. Wallis
1254	Lac du Bonnet	30 Apr 1945	A.G. Lawrence
1569	Stony Mountain	? Jun 1951	Nat. His. Society
1616	Haywood	01 May 1952	H. Mossop
1666	Marquette	03 Apr 1953	H. Mossop
1717	Legislature, Wpg.	08 Apr 1954	G. Parfitt
1724	Churchill	18 May 1954	E. Beckett

government greenhouse, Ralph Fryer and Angus Shortt also knew about this falcon (R.W. Nero, pers. comm., 1989).

Gardner called the peregrine a rare transient in the Oak Hammock Marsh region. He has recorded 38 sightings since 1953, dating from 30 April to 30 May, and from 13 August to 30 September.³ Summer records do not exist for peregrines in the area after 1953, but the Stony Moun-

tain pair was probably observed at Oak Hammock in 1951, because the naturalists mention a slough, and St. Andrew's Bog was the most prominent one in the area.

Discussion Although the data are limited, the available evidence suggests that at the time of initial settlement up until the early 1950s, the Peregrine Falcon was a rare breeding resident of Manitoba.

Lawrence's record of peregrines nesting in the Grand Rapids area seems plausible. Pony Island, Demich-age Rapids and the Gill River areas are suitable nesting locations, and to this day have not been closely examined for nesting peregrines. The pair nesting on the King Edward Municipal Hospital in the 1960s also appear valid. Finally, the egg set collected from the Gladstone area provides the first positive evidence of nesting of peregrines in Manitoba prior to 1989. The Thompson's Island fledglings seen by A.G. Lawrence near Minaki, Ontario, just 33 km east of the Manitoba-Ontario border late in the 1940s, is another creditable and supporting record.

A report of courting peregrines near Cape Merry as late as 1957, six reports of summer residents (one of which suggests nesting) and three other sources suggest that there is at least presumptive evidence that peregrines nested naturally in suitable locations in Manitoba in the historic period.

One reason peregrine eyries were not recorded more frequently in Manitoba may be the lack of suitable nesting habitat in southern Manitoba where the vast majority of bird observations are made. Also, in the recent past (after 1950), the Peregrine Falcon populations crashed because of pesticides (DDT in particular) and, therefore, one would not expect to find many, if any, peregrines in Manitoba from 1960 to the mid-1980s.

The available evidence indicates that historically, the Peregrine Falcon should be regarded as a rare but indigenous nesting species in Manitoba.

Acknowledgements

Appreciation is expressed to Herbert W.R. Copland who provided access to A.G. Lawrence's "Chickadee Notes," and to all authors and observers who submitted their records.

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TRUMPETER SWANS BREEDING IN EAST-CENTRAL SASKATCHEWAN

LEN SHANDRUK, DONALD F. HOOPER, and RHYS BEAULIEU.*

The only recent documented location of Trumpeter Swans nesting in Saskatchewan has been the Cypress Hills. This flock peaked during the early 1970s when three pairs produced nine or ten signets. During 1991 one pair of Trumpeter Swans nested on Coulee Lake Reservoir and produced one cygnet. Neckbands put on the Cypress Hills swans by the Canadian Wildlife Service have indicated that they winter in the over-crowded Yellowstone/Tri-state region. This may be one of the factors which has resulted in the very poor recruitment to this flock.

Over the last three to four years we have received reports of Trumpeter Swans in the area of Greenwater Provincial Park (103° lat., 52° long.) in east-central Saskatchewan. In October 1990, Donald Hooper and Herman Duerkson, local naturalists, observed and photographed a pair of adult swans and three cygnets on Greenwater Lake. From the call of this pair and inspection of the photos it was concluded that this was indeed a pair of Trumpeter Swans.

Greenwater Lake, Saskatchewan, is far from any of the known Trumpeter Swan breeding areas in western Canada. The closest known

breeding site is at Elinor Lake in northeastern Alberta and Cypress Hills in southwestern Saskatchewan. Other areas which are just as close are Lacreek National Wildlife Refuge in South Dakota and Delta Waterfowl Research Station in Manitoba.

While conducting fire surveys by helicopter during the spring of 1991 Rhys Beaulieu, wildlife ecologist with the Saskatchewan Wildlife Branch, noticed a pair of swans nesting on a small lake in the northern portion of Greenwater Lake Provincial Park. During a subsequent survey, he and park officials observed the pair with one cygnet. During early July the pair abandoned the breeding lake for another lake several kilometres to the northeast of the breeding sites, minus the cygnet.

On the invitation of the Saskatchewan Wildlife Branch, Len Shandruk of the Canadian Wildlife Service in Edmonton travelled to Greenwater Lake on 23 July 1991 to capture, identify and mark the pair of swans. With the assistance of Rhys Beaulieu, Don Hooper and park officer T.P. Andrychuk, we captured this moulting flightless pair using a motorboat and salmon-landing net. While they were being captured, the pair vocalized and their calls were recognized as that of trumpeters. The

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Len Shandruk with captured Trumpeter Swan

Donald F. Hooper

pair was leg-banded, collared, weighed, measured, and given parasite control medication. Samples of their blood were taken. The weights and measurements collected were determined to be in the range of the Trumpeter Swan and far exceeded those of the Tundra or Whistling Swan. The male received a yellow collar, 30 AC, while the female got yellow, 31 AC. Both birds were just starting to grow new primaries. The new wings were just over 100 mm long.

A search of the breeding lake located the nest site, with some shell fragments and one dead cygnet which had died just prior to or during hatching. The nest was in shallow water cattail habitat about 65 m from shore. It was built up with cattails and other aquatic vegetation about 40 cm above the mucky bottom with a wide moat around it.

The last recorded observation of this collared pair in Canada was on 13 August 1991 when they were observed on a lake about one km west of the cap-

ture site. Later, on 30 October 1991, a call was received by the Canadian Wildlife Service from Jay Pederson, assistant refuge manager of the Lacreek National Wildlife Refuge near Martin, South Dakota. He informed us that two yellow-collared swans (30 and 31 AC) were observed wintering on the refuge. This was very exciting news as it was the first time in recent history that Trumpeter Swans breeding in Canada were discovered using a new flyway and wintering area. This discovery could lead to management activities (sanctioned by the Rocky Mountain Population Recovery Plan and the Trumpeter Swan Society) that would increase the size of the flock breeding in Saskatchewan and wintering in an area other than the over-crowded Tristate region.

Should anyone observe these Trumpeter Swans again, we would appreciate being contacted with details of their location.

VIOLET-GREEN SWALLOWS AT SASKATOON

DAVID H. WRIGHT, Law Courts, 520 Spadina Crescent East, Saskatoon, Saskatchewan. S7K 3G7

The Violet-green Swallow, a bird of the far west and southwest, has been making its way north and east over the past decade or so. It has been sighted at Val Marie. During our annual vacation in central Arizona, I have had a number of opportunities to observe this attractive little bird. On 26 May 1991 I paid a visit to a marsh located north of Saskatoon, approximately 0.8 km east of No. 16 highway and just south of 70th Street. It is part of a chain of sloughs that are gradually being destroyed by urban sprawl and redevelopment. The land is privately owned. When the sloughs located in this area finally disappear there will be no more wetlands left in the Saskatoon area of comparable quality or variety.

I decided on this date that I would carry out a detailed investigation of the slough boundaries immediately south of 70th Street. This entailed the use of hipwaders and binoculars. I carried a camera with me at the same time but it does not have any telephoto apparatus. The spring and summer of 1991 saw substantial increases in the water level. As a consequence the cattails, bullrushes, and marsh grasses, as well as small shrubs, had prospered and the whole area was very green and was well populated by many species of birds. As I waded around the western edge of the slough I noticed a number of swallows darting about, approximately 12 m above the surface of the water.

What first attracted my attention was the twittering call. As I stopped to study the flock of 12 to 15 in my binoculars I

then noticed several of the male adults were showing prominent green backs. To that point I thought I was seeing a larger than normal group of Tree Swallows but after a few minutes I realized that the birds had white patches on each side of the rump, a field mark characteristic of the Violet-green Swallow. I rechecked my observation several times and was quite satisfied as to what I had seen. I had observed the same markings in Arizona. The swallows seemed to form a loose but cohesive group and were unlike the Tree Swallows that I have observed in the past in smaller groups of perhaps four to six and which seem to fly in essentially separate patterns. The birds moved slowly across the marshland as a loose group, feeding and calling. The twittering call is much more pronounced than one hears from Tree Swallows.

It was only after I began some investigations that it occurred to me that my observations might be something more than routine. When I returned to the marsh at a later date there was no evidence of any Violet-green Swallows nor did I see any for the balance of the summer. I wonder now if they were making an isolated visit to that particular area. Whatever the reason, one may properly assume, given the time of year, that they were local birds and probably breeding somewhere in the area. I would be interested in knowing if any other observers have sighted the violet-green in the Saskatoon district or this far north and east in the province.

NOTES ON COOPER'S HAWK NESTING IN WINNIPEG

JEAN BANCROFT, 306-200 Tuxedo Boulevard, Winnipeg, Manitoba.
R3P 0R3

The Cooper's Hawk, often known as the "chicken hawk," has been described as a "feathered ferocity" and "one of hawkdom's more bloodthirsty villains."⁵ An accipiter preying mainly on birds, it sometimes attacks birds at feeders, and also preys on small mammals and reptiles.⁶ Due to its bad reputation, "it has been regarded for generations as a pest to be eliminated," especially by poultry farmers.^{1,5}

This species used to be quite common before World War II throughout its range, viz. all of the United States, Mexico and southern Canada, but it has declined considerably and, in some parts, is regarded as an endangered species.⁵ There are three reasons given for its decline: killing by farmers, contact with pesticides, and loss of woodland areas for nest sites. In Illinois, for example, steps are being taken to encourage the preservation of this species.⁵

Cooper's Hawks have been known to nest in Winnipeg and outlying areas, but few details have been reported, according to Rudolph Koes (pers. comm., 1992). I would like to offer my brief notes in order to encourage more people to take an interest in these birds.

From early spring to late fall, I

make frequent morning visits to a wooded park not far from where I live, walking for exercise and enjoyment. I am now 81, and live alone, so I cherish visits to Assiniboine Park here in Winnipeg. The Assiniboine River runs along the park; a nearby pedestrian bridge offers shelter for hundreds of nesting Cliff Swallows. The park is a wonderful place to watch birds, particularly during migration when warblers pass through in abundance.

On 11 May 1990 I discovered a Cooper's Hawk nesting about 18 m from the ground in a Black Ash, just east of the locally famous "English Garden." On 27 June, on a visit to observe the nesting Cliff Swallows, I heard many swallow alarm calls. Hurrying to an open space a few hundred metres from the hawk's nest, I was fascinated to see the pair of Cooper's Hawks circling wildly amongst hundreds of swallows. The hawks were on a hunting flight, but I was unable to remain for any length of time to view the results.

I last saw a Cooper's Hawk in this area on 5 September when an adult pursued a group of American Crows. There were three young produced at this nest, according to George Holland (pers. comm., 1990). He noticed that the male caught a Red Squirrel

and an American Robin.

On 7 April 1991 I was delighted to see a Cooper's Hawk fly to a giant Black Ash and deposit some sticks in the crotch of three large upright branches, about 15 m from the ground. This was not far from the 1990 nest site. Bent notes that it is common for this species to "return to the same patch of woods to nest for several years in succession."¹

The male chooses the nest site, and usually he builds a new nest each year, sometimes choosing an old crow or squirrel nest as a base.^{3,6} While the male labours carrying the twigs, the female (the larger of the two) perches nearby. Much of her food is provided by the male.⁶ Bent claims that both sexes build; Uvardy states that the male builds with the "female's assistance."^{1,7}

By 24 April the nest was completed. Four days later, with a wind of 70 km/hour and rain, the female was sitting low in the nest. Cooper's Hawks generally have three to five bluish-green eggs, incubated by both sexes, but mostly by the female.^{1,2} On 8 May, the male flew to the nest where the female sat and then he darted quickly downwards into a nearby thicket. I could not see if any food was delivered to the female. Both birds then flew from the nest site, probably to hunt.⁶

On 7 May the male perched on a high branch about 30 m from the nest site between 1100 h and 1130 h. During this period the male twice flew to the nest. I believe he must have delivered food to the female because she moved around a great deal and appeared to be tearing at something. Many leafy branches obscured the nest.

On 13 May I heard loud, rapid *kek-kek-kek-kek* calls, as described by Uvardy and watched the male fly over the nearby duck pond.⁷ He disappeared into another wooded area not too far away, but out of my view.

On 14 June at 1015 h, when the female flew off the nest, I noticed two young moving about in the nest. The incubation period is said to be 36 days.^{2,6} After the eggs hatch, the male reportedly is banished from the nest. Hohn writes: "Brown and Amadon state that the female carries the egg shells 50 yards or farther from the nest."⁴ The female broods her chicks until they are two weeks old.⁶ During this time, the male "may not bring food to her nor feed the nestlings. Instead, the food is delivered to a spot near the nest, where the female takes it from him."⁶

On 18 June I noticed a nestling sitting up in the nest and heard the male call. Ten days later, two fledged young were perched on a branch above the nest. On 5 July two fledged young perched sideways on a branch near the nest and flapped their wings. The thick foliage made it difficult to get a good view. Finally I noticed that there were three young perched on branches near the nest, and about 12 m from the ground. On 20 July loud shrill calls came from another part of the wooded area about 30 m away. The nest was now deserted.

On 29 July I observed one young hawk fly underneath the bridge. I hurried down the embankment and managed to focus my binoculars on a ledge above numerous Cliff Swallow nests. The hawk made no attempt to catch any swallows, though there were many young swallows out of the nests.

By 3 August I had visited the nest site at least 26 times. That morning I heard an adult Cooper's Hawk call loudly about 30 m from the nest site. I noticed one fledgling perched upright on a branch high above the spot where this adult zoomed into the woods. Bent notes that this species "surprises its prey by a sudden, swift dash, pouncing upon it before it has a chance to escape."¹ The last time I saw a Cooper's Hawk in the park in 1991 was 26 August.

Acknowledgement

I am grateful to Robert Nero for constructive criticism of two drafts of this article.

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In 1855 a famous Squamish American Indian Chief, Seatl, after whom Seattle, Washington is named, said words that to-day are even more appropriate: "What is man without the beasts? If all the beasts were gone, man would die from great loneliness of spirit, for whatever happens to the beasts also happens to man. All things are connected." *John Carroll, 1991. "Birds, Beasts and Flowers."*

SECOND WINTER RECORD OF BLACK GUILLEMOT AT CHURCHILL, MANITOBA

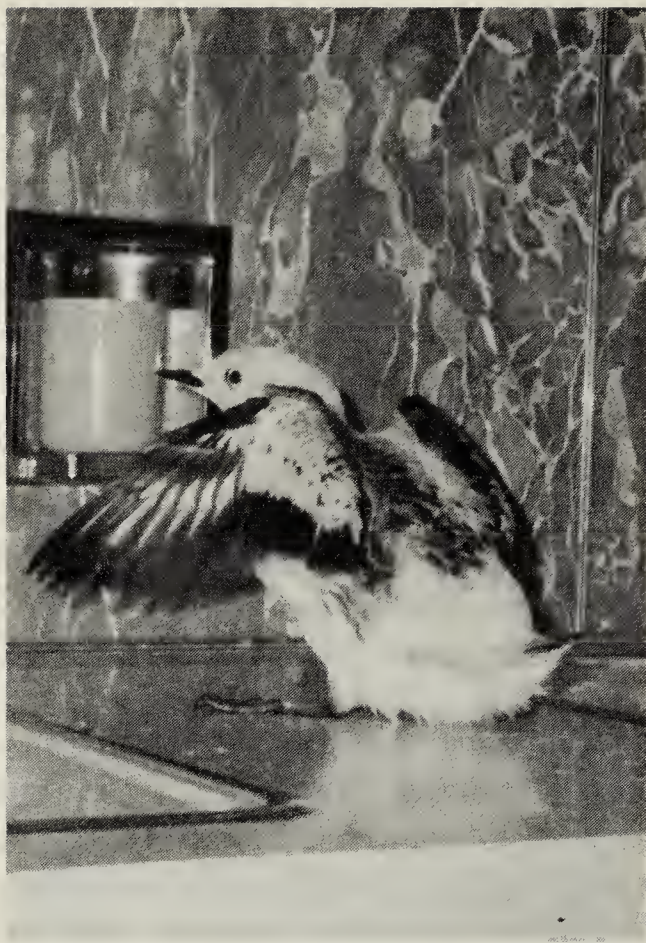
ROBERT W. NERO, Wildlife Branch, Box 14, 1495 St. James Street,
Winnipeg, Manitoba. R3H 0W9

Black Guillemots have previously been reported at Churchill, all but one being summer and fall records. The exception was an adult bird found alive about 6 km south of town, 8 March 1974.^{1,2} A bird found alive in Churchill on 4 January 1991 is apparently the second winter record. According to natural resources officer Gary Friesen, Dave Lundie saw the bird slip from the grasp of a low-flying Common Raven in town. This happened at midday. The bird was rescued and, because it seemed to be able to fly, Lundie took it to Friesen, who arranged to have it turned over to the Manitoba Wildlife Rehabilitation Organization (MWRO) in Winnipeg, a volunteer organization that treats injured and orphaned wildlife. The bird — still not correctly identified — was transported via Canadian Air in the custody of Joyce Friesen. Garth Ball, of the Manitoba Wildlife Branch, met the plane and brought the bird to me.

In its winter plumage the bird is mostly white, a striking change from the black summer plumage. It was the first live Black Guillemot I had ever seen, but it nearly matched the sketch of one drawn by R. W. Sutton for an article in a 1968 issue of the *Blue Jay*.²

I passed the bird on to MWRO volunteer rehabilitator Janice McCarthy, who cared for it over the weekend and then took it to the Assiniboine Park Zoo hospital where she works. Together with Dr. Gordon Glover, they gave the bird a thorough examination. They found no broken bones or obvious injuries, but the bird was noticeably thin. Despite its spirited appearance and ready consumption of food, it died that evening. An autopsy carried out by Dr. James Neufeld, MWRO president, revealed a large amount of scar tissue resulting from a ruptured liver, but the cause of death was believed to be a strep bacterial infection. Portions of the specimen, a juvenile bird of unknown sex, were turned over to Dr. Spencer G. Sealy, University of Manitoba, Zoology Department.

The occurrence of the Black Guillemot at inland sites in winter in this region, as pointed out both by Best and Sirois, is probably related to the large numbers that overwinter on leads (open water) in the pack-ice of Hudson Bay.^{1,3} This could be the origin of a bird photographed near Yellowknife on 26 November 1988 (first Northwest Territories record), another recorded on 21 November 1988 near Fairview, Alberta, (first Alberta record), one at Regina on 26 November 1988 (first Saskatchewan



Juvenile Black Guillemot. Robert Nero



Juvenile Black Guillemot in rehabilitation. Robert Nero

record), one at Morris, Manitoba, 12 November 1966 (first Manitoba record), one south of Churchill, 8 March 1974, and the present specimen.^{1,2,3}

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[When introduced] the English sparrow ... was hailed as a foe of the canker-worm. *Peter Matthiessen, 1959. Wildlife in America. Viking, New York.*

BALD EAGLE PREDATION ON INLAND DOUBLE-CRESTED CORMORANT

J. DAVID HUNT, ROGER M. EVANS, and GEORGE SHNIER, Zoology Department, University of Manitoba, Winnipeg, Manitoba. R3T 2N2

On 29 May 1991 at 10:15 a.m., while conducting research at Kaweenakumik Lake (approximately 60 km south of Grand Rapids, Manitoba, and part of the Manitoba Ecological Reserves Program), we observed both a colony of Double-crested Cormorants and an adjacent colony of Ring-billed Gulls suddenly take to the air above their island nesting site. We knew of no mammalian predators inhabiting the island, so we quickly scanned the area searching for an avian predator. Nothing was sighted, and after approximately two minutes the Ring-billed Gulls returned to their colony. The Double-crested Cormorants however either settled in the lake just off the southern shore of the island, or continued to circle in the air above.

At 10:25 a.m. there were still no cormorants on the island. There was, however, an unusually large number of Ring-billed Gulls dispersed throughout the cormorants' breeding area. Because Ring-billed Gulls are opportunistic feeders, and we have seen them feed on exposed cormorant eggs (pers. obs.), we decided to investigate the cause of the cormorants' continued absence from the nesting area during this critical point in their reproductive cycle.¹

When we arrived on the island at 10:45 a. m., the cormorants were still circling in the air or resting on the lake, while the gulls could be seen pecking at cormorant nest contents. As we moved to approximately 70 m from the edge of the rocky nesting site, an adult Bald Eagle flew up from the middle of the colony. Upon investigation we found a freshly killed adult cormorant, which the eagle was presumably in the process of consuming. Although the head, esophagus and much of the small intestine remained intact, little else of the bird's internal structure remained. As a result, we were unable to sex the bird.

A quick scan of the colony revealed that a number of cormorant eggs had been destroyed by the gulls, so we lightly covered the remaining eggs with duff (dirt, feathers, vegetation, etc.) before leaving the colony at 10:55 a.m.. We have found that covering the eggs this way helps protect them until the cormorants return to their nests, without any negative consequences to the cormorants or to the eggs themselves. When we left the island (with the carcass), the cormorants immediately returned.

Similar colony departures by the cormorants were noted on 27 May at 10:30 a.m., and on 1 June at 4:00

p.m., but the eagles were not seen. When the cormorant colony was last visited on 24 June only two nests of more than 200 had any eggs left, both singles. This has been a well established cormorant nesting site since at least 1978 (R. Evans, pers. obs.).

Although it has been noted in several papers that Bald Eagles feed on cormorants in coastal areas, only Hobson et al. have described them feeding on inland Double-crested Cormorants.^{2,3,4,5} They found that such predation was a significant source of chick mortality, but made no mention of predation on the adults themselves. For this reason, we believe this to be the first recorded account of Bald Eagle predation on an inland adult Double-crested Cormorant in North America.

The above observations were made while conducting research

funded by a University of Manitoba fellowship (D. Hunt) and an NSERC operating grant (R. Evans).

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Any young beginner in academic circles who demonstrates to his colleagues that the members of an accepted species can be divided into two slightly different species gets a very conspicuous good mark against his name. In many cases he even helps along a colleague who, a decade later, will again reduce the two species to one, and get an equally good mark against his. *J.W. Krutch, 1952. The Desert Year. William Sloane.*

ENCOUNTERS WITH WOLVES AT PRINCE ALBERT NATIONAL PARK

STUART DECHKA, 2873 Athol Street, Regina, Saskatchewan. S4S 1Y3

On the morning of 12 September 1989 Lori Skulski and I drove north on Highway 263 in Prince Albert National Park. The sky was mainly clear and, though cool, it was a nice autumn day. Near the turnoff to Namekus Lake we saw a large dog-like animal crossing the road ahead and as we drove closer we got a better view of it as it disappeared to the trees on the west side of the road. It was definitely a dog of some sort, a large one, uneven grey in colour, with a pointed face. The Namekus Campground was about 3 km away and we saw no vehicles parked nearby. Maybe it was not someone's German Shepherd, maybe it was a ... "Naw, it couldn't be." We had listened to wolves in Prince Albert National Park, but did not expect to be so lucky as to see one so easily.

We drove to the head of the Mud Creek Trail, which is west on the Narrows Road. As we hiked the trail and saw an assortment of birds, we were ever on the lookout for otters (*Lutra canadensis*) as we had seen them in the park before, both in Waskesiu Lake and in Mud Creek itself. We came to roughly midway on the looped trail and we stepped out onto the beach about 50 m from where Mud Creek meets the lake.

Suddenly, across the creek from us, an elk cow and calf charged out of the forest. They continued frantically into the bay of the lake and swam urgently towards the centre of

it. Within seconds four large canines appeared from the same spot and splashed into the water and halted. They stared round-eyed towards the elk. One in up to his chest lapped at the water. They all panted hard.

One of the canines was fairly dark grey, another much lighter, two were black. The lighter one seemed a bit smaller but otherwise they looked very much the same. The one farthest into the bay began staring at us. We stared back through our binoculars. We couldn't believe our luck — wolves. They retreated into the bush after a few minutes. Meanwhile the elk were barely visible to the naked eye, swimming towards the east shore of the bay.

I crossed the creek to where the wolves had been on the beach. As I reached the spot a black one and one other bolted further into the forest from the shrubs at the edge of the beach. I'll bet they weren't half as startled as I was. The tracks were there for us to see (see photo).

Later the same day we saw another grey wolf as it crossed the Narrows Road close to Trippes Beach. We have not seen a wolf since, not in three years or so. However, each time I come across a set of large dog tracks in a place such as Prince Albert National Park, I look very carefully to see if they might be those of a wolf.



Wolf tracks, Mud Creek, P.A.N.P.

Stuart Dechka

BATS AND WEASELS

The following are a few observations on bats and weasels made in 1991.

Long-tailed Weasels About 7:00 a.m. on 5 July, while driving slowly on a road across a slough (5 km northeast of Saskatoon), I saw the heads of several small animals in the grass at the edge of the gravel. They disappeared. I stopped, backed up and waited. In a few minutes, they ran slowly across the road about 100 m ahead of the car. It was an amazing sight — nine long brown and white bodies, nine long black-tipped tails and 36 short legs in two bunches. They were large weasels — much longer than

Richardson's Ground Squirrels. I was too busy counting to notice whether there was any difference in size within the group.

Bats On 15 August, about 7:45 a.m., while getting out of the car to do some birding at the old Sanatorium site in Saskatoon, I saw two Merlins chasing — or following — a bat (maybe half their size) out of the park. The observation probably lasted four or five seconds before all three disappeared over a building. I doubt that the falcons caught the bat because they were back in the park within two or three minutes. — *Bernie Gollop*, 2202 York Avenue, Saskatoon, Saskatchewan. S7J 1J1

NATURE LIBRARY

ONE LONG ARGUMENT

ERNST MAYR. 1991. Harvard University Press, Cambridge. 195 pp.

An abstract published by Charles Darwin in 1859 changed the world. The great importance of his work, especially "The Origin of Species," draws attention to Darwin, a shy, reserved and upstanding character. If you were in any way hesitant about giving Darwin his due before, I suggest you read Ernst Mayr's latest book, *One Long Argument*. It will impress upon the reader that Darwin had a "brilliant mind, great intellectual boldness, and an ability to combine the best qualities of a naturalist-observer, philosophical theoretician, and experimentalist."

This book, 195 pages of text, glossary, references and index (with a few photographs of the big names in early evolutionary thinking) is about the philosophical and historical development of evolutionary thinking since Darwin. The book is also a description of the gross anatomy of Darwin's compound evolutionary theory and how it is defined from various viewpoints. Mayr also emphasises the role and importance of Thomas Malthus (1766-1834), an economist whose "Essay on the Principle of Population" gave Darwin and Alfred Russell Wallace some interesting aspects to look at. There is also a discussion of A. Weismann (1834-1914), a German evolutionist, and his effect on Darwin's thinking. It is sad to say, Weismann is often remembered today as the one who cut tails off mice. Later, Mayr follows the evolutionary synthesis which occurred between 1936 and 1950, when "unification of a previously

badly split field" began and naturalists and geneticists integrated their ideas.

Early in the book the attacks on evolutionary theory from "creationists" are discussed in detail. Opposing Darwin, or at least disagreeing with his apparent downplaying of the importance of God, were fellow scientists Henslow, Sedgewick, Agassiz, and Owen, to name a few. Their opposition was based primarily on their religious beliefs, some agreeing with many aspects of Darwin's theory. It is interesting to note Mayr's comments on current attacks: "claims [today] that Darwinism is obsolete have been made in numerous articles and books also by several non-biologists, whose arguments, though non-religious are based on such ignorance of evolutionary biology that it is not worthwhile to provide references to their writings."

The final chapter sums up Darwin's five sub-theories: evolution, common descent, development of diversity, gradualism, and finally, natural selection. Though not all were embraced by biologists immediately, years of work have substantiated Darwinian evolution and pushed it forward.

Finally, some may ask, should we encourage another book on Darwin? Haven't we read enough about him? I know of no other book that explains Darwin and Darwinism in such a passionate, knowledgeable, and clear-cut fashion as *One Long Argument* by Ernst Mayr.

Reviewed by *Tim Tokaryk*, Saskatchewan Museum of Natural History, 2340 Albert Street, Regina, Saskatchewan. S4P 3V7

A DICTIONARY OF ETHOLOGY

KLAUS IMMELMANN and COLIN BEER. 1989. Harvard University Press, Cambridge, Massachusetts. xiii + 336 pp. \$35.00 (US)

This dictionary is, in part, an expanded version and English translation of three earlier compilations of ethological terms originally written in German by the late Klaus Immelmann.

The authors state that the main function of this dictionary is to explain the more important terms used in the study of animal behaviour and to survey their range of application. To this end they have excluded highly technical terms that apply only to one or a few species — terms that might only serve the needs of specialists. Each entry in the dictionary is boldfaced, followed by a capsule definition consisting of words that are synonymous or closely related in meaning to the term being defined. An explanation of the term is then given followed by examples and, in many instances, by cross-references to one or more other terms. In using examples to support their definitions of terms, the authors have chosen to consider the higher vertebrates because, they state, "This is more than a reflection of our own research interests, which have been mainly in the area of bird behaviour; it is a consequence of the fact that, from the beginning, observations and experiments on birds and mammals have

supplied a high proportion of ethology's basic needs ideas and technical concepts." The cross-references appear in bold uppercase letters in parentheses. Throughout the text the authors of other publications are cited and then listed with their publications in a bibliography at the end of the book. Unfortunately, there are nine authors and references listed in the bibliography which do not appear within the compilation. Further, two errors in the year of publication occur in the compilation and the bibliography.

In reviewing this compilation of more than 1,000 entries, some 700 term descriptions, and more than 800 cross-references, I soon learned that most of the term definitions were supported by relatively lengthy and very informative in-depth discussions and examples. Rather than being just a dictionary, this compilation appears to be more encyclopedic in its approach and, as such, an important and useful reference for professional and serious students of animal behaviour. As an addition to an office or home library, this compilation should be a great asset to those who enjoy observing the behaviour of animals and desire to write and publish their observations, and to those who wish to define terms encountered when reading ethological literature.

Reviewed by *George J. Mitchell*, Department of Biology, University of Regina, Regina, Saskatchewan. S4S 0A2



SUMMER HAS COME

A nickel's worth of wren pours out a million dollar's worth of melody between stints of lugging unwieldy sticks to her house in the maple outside the kitchen window. Many of the sticks are stolen from the nest of mourning doves in a nearby tree, who don't appear to notice it. No matter; she fought for that house and it's hers by right of conquest. The tree swallows wanted it, and the ubiquitous sparrows; but Jenny prevailed, so now she has it, for a song and a fight. A pair of robins in the next tree but one looked on with detached and philosophical interest, and the orioles paid no heed. The ruby-throated hummingbirds — those unbelievably beautiful feathered jewels — flit in the currant bushes and the wax-wings visit the spruces.

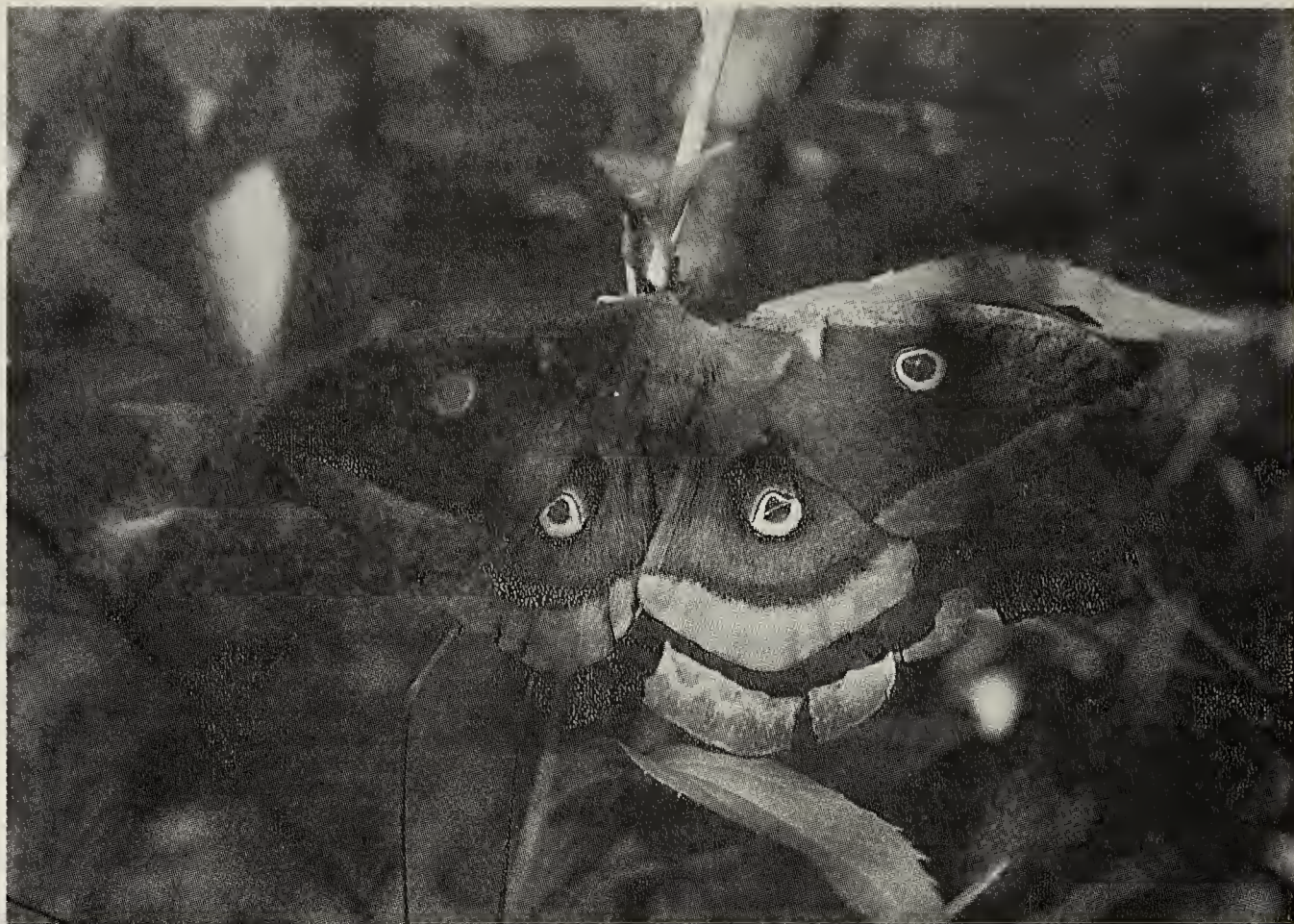
Summer has come to Manitoba.

By *Bogi Bjarnason*, reprinted from the *Winnipeg Tribune*.



*Clustered Broomrape (Orobanche faciculata), Bird's Hill
Provincial Park, Manitoba*

Gordon J. Smith



Polyphemus moths (mating), Bird's Hill Provincial Park, Manitoba

Gordon J. Smith



White-tailed Deer fawn, Bird's Hill Provincial Park, Manitoba

Gordon J. Smith

LETTERS

DO CARRION BEETLES KILL YOUNG BIRDS?

Dear Editor:

In the spring of 1991 I was asked to monitor some nest boxes for the Prairie Nest Box Monitoring Program. I had placed the boxes out two years before and did not have the time previously to monitor the results. Of the 15 boxes I was monitoring ten had bluebird nests in them and five had swallows in the first hatch period.

On 19 June when I monitored nest box No. 4 there were six newly-hatched swallows, all in good health. On 27 June I found the female adult had built a small nest on top of the old nest and there were three eggs in the nest. There was a very bad smell coming from the nest and upon investigation, I found all the young swallows were dead in the nest below. Just the skins of them remained. The nest was a black, gooey mess. When I removed the remains, I noticed some movement in the bottom of the nest, and I uncovered ten large beetles there. I placed two of them in a plastic bottle and gave them to our ag. rep. to have them identified, giving him the information as to what had happened. They identified them as Giant Carrion Beetles and said that they did not think the beetles would kill the young birds and there must be some other reason the nestlings died.

On 18 July I checked nest box No. 9 and there were five bluebird eggs — the second nesting of these bluebirds. When I returned on 27 July the adult birds were absent and all five

newly hatched young were dead. Again, I noticed some movement in the bottom of the nest and found carrion beetles present. The birds all looked like they had died about the same time.

I have asked experts if they have had this problem and they do not think these beetles kill young nestlings. Mr. Warren Hjertaas, of Yorkton, also reported observing a nest of young bluebirds, nearly ready to fledge, which he found to be dead and with carrion beetles in the nest. It was his impression that they also were killed by these insects.

From the results of my monitoring I would say that these beetles do somehow kill the young and feed on them. Further monitoring will be necessary to confirm this in future years. I would be glad to hear of your experience with them.

Lorne Rowell, Box 639, Fort Qu'Appelle, Saskatchewan. S0G 1S0

Dear Lorne:

According to Ronald Hooper with the Museum of Natural History in Regina, he can find no reference in literature to carrion beetles killing vertebrates. He has only found them on dead birds or mammals and has never seen them attacking live ones. Adult carrion beetles, however, commonly feed on fly larvae on carrion. Their larvae feed on the carrion itself. Carrion beetles have the ability to find carrion readily and can be found on birds and mammals that have not been dead for long.

Editor.

MYSTERIOUS COCOON

Dear Editor:

Enclosed is a picture taken last fall of a cocoon I found. It was lying on the ground at the outer edge of the leaf line of the weeping birch. I had almost stepped on it when I walked around the tree and it was a real thrill to see that it was a cocoon. Though I watch for cocoons this is only the second one I have come across.

Can it be identified by the picture? I have an old moth book, a library discard, but I find it a little hard to follow. There is a drawing and a description of a caterpillar very like two that I had noticed on the honeysuckle bushes; there is a drawing of a cocoon that looks just like the photo and it is called *Telea polyphemus*. There is a coloured picture of the moth by this name.

The cocoon is about two inches in overall length and was full and heavy. The other one I had seen, under a lilac bush was damaged and never hatched. This second one is safely hidden in the snow under the birch. The book describes the cocoon as being spun in the leaves of the tree, falling to



Polyphemus Silk Moth cocoon found near a Weeping Birch, Nipawin, Saskatchewan
M.B. Evans

the ground later, which is how it appeared to be when I happened on it.

I carefully looked around the tree and the lilacs, but have not seen any more such specimens. I am certainly looking forward to see what emerges but do wonder if I am missing these cocoons. Would it be worthwhile to put a large caterpillar into a container to see if it will go into hibernation?

M.B. Evans, Box 71, Nipawin, Saskatchewan. S0E 1E0

Dear M.B. Evans:

Ronald Hooper of the Museum of Natural History in Regina looked at the photograph you sent and was able to identify it as a cocoon of the Polyphemus Silk Moth (*Antheraea polyphemus*). It used to be called *Telea polyphemus*.

According to Mr. Hooper, the Polyphemus Silk Moth prefers birch as a food plant, but it will also feed on willow, poplar or maple. The moth is fairly common in wooded areas of Saskatchewan.

Live caterpillars can be placed in jars and fed with fresh leaves from the food plant until they spin their cocoons and pupate. After a caterpillar has pupated indoors the jar with the cocoon needs to be placed out in a shed or similar place for part of the winter, where it will freeze. (A deep freeze is too severe.) The winter cold causes the creature in the cocoon to postpone developing and go into a resting state known as "diapause." The pupa can be fooled by bringing the cocoon indoors in mid-winter. The warmth of the house will cause it to think that spring has come. This will break the diapause state and cause the pupa to begin to develop into a moth. This could take from two weeks to a month.

When the pupa breaks open and the moth emerges it is helpful to put a small stick in the jar so it has something to

climb on and allowing it enough room to spread its wings.

Going through the above procedure does not guarantee that you will get a moth. If parasitic wasps have laid their eggs in the caterpillar, you would get wasps instead of a moth.

Editor.

ALBINO MAGPIE NEAR EDMONTON

Dear *Blue Jay*:

This is my response to the article "Observations of Albinism in Birds" by Jean Bancroft in the September 1991 issue of *Blue Jay*. On several occasions during the summer and fall of 1991, I spotted a grey and white coloured version of magpie in the central area of Edmonton (I am not sure if this was one bird or several). It appeared to be normal in all other respects, except that where a normal magpie has black, this one had a light grey colour. I paid particular attention to the eyes of this "albino" magpie. As albino mammals have pink eyes, I thought that an albino bird might also display this trait. This bird had normal looking black eyes. Therefore, I am not sure if this magpie was a light-coloured variant of a magpie, or if it was a true albino.

Unfortunately, I did not have a camera with me and so do not have a photograph as proof. I do have corroborating observations by others. The University of Alberta Department of Zoology maintains a long-term project on the populations of magpies around the university. They may have spotted this colour variation in their study. Bancroft's article brought these memories to the surface of my consciousness once more.

Miles Constable, Environmental Protection, Room 210, 2nd Floor, Twin Atria 2, 4999 - 98 Avenue, Edmonton, Alberta. T6B 2X3

WHAT A BLACK-TAILED GODWIT LOOKS LIKE

Dear Editor:

After I wrote the article detailing the discovery of a Black-tailed Godwit at Brown's Slough on 14 July 1990 (see *Blue Jay* 49:90), I sent a copy of the article to Fred Lahrman, a well-known bird artist. I asked him to paint a picture of the bird using only the material I gave him. He said he could and gave me the picture when he finished (see below).

The bird depicted resembles the one we saw, but ours had more grey on the back. When I was in Australia in October 1991, I saw many Black-tailed Godwits exactly as Fred has painted it. Although Fred's work is only a painting — not a photograph — it will give readers a good idea of the appearance of the bird we saw.

Frank H. Brazier, 2657 Cameron Street, Regina, Saskatchewan. S4T 2W5



*Fred Lahrman's rendition of a
Black-tailed Godwit* Fred Lahrman

GUIDELINES FOR AUTHORS

Following the format used by a journal when a manuscript is prepared for submission eases the task of editing and preparing the article for printing. Handwritten copy is not refused; the following guides should also be used by those who do not have access to typewriters or computers for preparation of their submission.

Style

The *Blue Jay* is the journal of the Saskatchewan Natural History Society and publishes articles of scientific or general interest dealing mainly with the northern prairie area. Papers are accepted from members of the Saskatchewan Natural History Society or any other interested individual. Reporting of any observation of significance in the field of natural history is encouraged. The *Blue Jay* is classed as a semi-refereed journal. All submissions are reviewed by at least one individual competent in the field plus the editor.

Except in the case of letters, the use of the pronouns "I" and "we" are not encouraged, nor is the use of melodramatic reporting — these more properly belong in popular magazines. Also the use of proper names of observers is more correct than designation by titles such as Mr., Mrs. or Dr. Reporting of rare species or unusual occurrences should include as much detail as possible. For example, the interest lies as much in which of the field marks of a rare bird were seen as in the fact that it was observed at a given location and time.

Photographs and sketches add a

great deal to the impact of an article on its readers. Although the Saskatchewan Natural History Society maintains a file of photographs available for illustration, it is by no means complete and new material or relevant illustrations are welcomed.

Scientific names are not used for North American bird and mammal species for which common names are adequate to identify the species under discussion. For plants, insects, and palaeontological species both common and Latin names are used; the latter are indicated as being italicized by a single underline, and appear in parentheses following the first occurrence of the common name, if known. Common names are written with capital letters when they are an accepted name for the species. Current sources of common names being used are as follows:

AMERICAN ORNITHOLOGISTS' UNION. 1983. The A.O.U. checklist of North American birds. Sixth Edition.

BANFIELD, A.W.F. 1974. The mammals of Canada. National Museum of Natural Sciences, University of Toronto Press, Toronto.

Where a list of plant species is given it is customary for the author to state the source of common names used (i.e., MOSS, E. H. 1967. Flora of Alberta. University of Toronto Press, Toronto). In cases where no common name can be found in literature, use of the latin name alone occurs. In these cases, use of photographic material and/or sketches becomes even more valuable.

Numbers are written out from one to nine (inclusive); digits are used

with standard units of measure, including dates, times, page numbers, percentages, etc.. Above nine, numerals are used for all numbers. When a number less than 10 occurs with numbers 10 or greater, then that number should also be a numeral. Never begin a sentence with numerals, reword the sentence, write out the number, or end the preceding sentence with a semicolon. Very large numbers should make use of a word or prefix (e.g., 1.6 million).

Dates are usually written with the day, followed by the name of the month, then the year. The use of the word "on" is usually avoided unless the date appears at the beginning of a sentence.

Time can be noted using either the 12- or 24-hour clock. When using the 24-hour clock the time is given as four digits, two each for hours and minutes, not separated and it should be followed by the abbreviation h for hours, e.g., 2113 h. The 12-hour clock requires the use of a colon between the hours and minutes and the designation a.m. or p.m. (e.g., 9:13 p.m.).

Distance can be given in either the English or metric (SI) systems, however use only one system within the article. Mile is abbreviated mi.; kilometre is abbreviated km (note no period, also for metre – m, centimetre – cm, etc.).

Direction can be given using the abbreviations n, s, e, w, ne, nw, se, sw, etc. without periods.

Tables are given a number for identification within the text. The table number portion of the heading is in upper and lower case; the title is in all upper case (e.g., Table 1: BIRD NUMBERS). Subheadings are usually in upper and lower case unless for purposes of separating several sets of subheadings it is necessary to use a style such as all capitals. Underlining of subheadings denotes that they are to be in italics.

Please note that **letters** and very **short notes** are usually set with the author's name(s) and address(es) at the end of the text, following an em dash. Since most typewriters do not have an em dash, a double hyphen (—) is substituted. The same system applies to **book reviews**.

If there is uncertainty about some aspects of format and style please check with a recent issue of *Blue Jay* for similar types of articles. When in doubt, consult the **CBE Style Manual** (Council of Biology Editors Style Manual, Fourth Edition 1978, CBE, American Institute of Biological Sciences, 1401 Wilson Boulevard, Arlington, VA, USA 22209) and follow their suggested format or style.

The **original and one copy** should be submitted of all text and figures. Please send one copy of photographic material (keep the original), or send the original if you do not want to keep a copy of the photograph for yourself. Add a note with your submission if you would like the photographic material returned, otherwise it will be added to the *Blue Jay* photographic file. The Saskatchewan Natural History Society does not guarantee the return of photographic material. Slides can be copied for use by the printers. Prints should be on glossy paper, either black and white or colour. If your prints are on a matte or other finish, please send the negative so that glossy prints can be made. Captions and photo credits should accompany all photographic material.

Format

Titles are all in capital letters, beginning at the left margin at the top of the article and are **not underlined or on a separate page**. **Authors' names** are capitalized and begin at the left margin. The **address** (no abbreviations to be used) is in the upper and lower case with the province name followed by a period, after which the postal code appears.

Text should all be double-spaced to allow space for the insertion of editorial changes (please see section for computer users regarding spacing).

Paragraphs do not require indentation but an extra space should be left between paragraphs. **Headings** within the text are not underlined or capitalized and begin at the left margin.

No title is required to the references which are listed alphabetically at the end of the article, with authors' names in capitals, the remainder of the reference in upper/lower case. References are numbered consecutively with superscript numbers. These numbers are usually placed at the end of the sentence in which the reference is made (the superscript numbers may be entered by hand in typewritten submissions). Please do not put commas between reference numbers listed together, separate them by a single space. Lower case is used in titles with the exception of the beginning letter and proper nouns. Standard abbreviations are used for publication names where possible. Names of journals are underlined to denote italics.

It is especially important that authors check all references for accuracy and completeness. Not all of the publications you may have seen are available to the editors, and checking references is a very time-consuming and thankless task. For others who may wish to consult these references it is a great frustration to find incomplete or incorrect information.

For Computer Users

Manuscripts may be submitted in text file form on IBM compatible 5.25 in. or 3.5 in. DSDD diskettes which will be returned to authors when copies have been made. At least one paper copy of the manuscript should be included. Currently the editor has access to the wordprocessing program *Wordperfect 5.1*, thus materials entered using this program can be sent without changing to text file format. This program will also import *WordStar* documents.

The use of several style modifications when entering material will also reduce the time required for editing and preparing these papers. The document should be single spaced; please double space the hard copy which will be used by the editors. Headings in the text should be in bold face; anything that should appear in italics should be underlined. If possible leave only a single space after the period at the end of the sentences. Extra spaces are removed when the article is coded for typesetting. Paragraphs are separated by two hard returns with no indents, tabs or spaces at the beginning of the paragraph. Tables are more easily handled if set up using tabs to define the columns. If your program does not handle superscript numbers designate them by a double asterisk (i.e., ³ is noted by **3).

Following the above guidelines will save time and trouble for your editors, all of whom are volunteers. Your article will also likely appear in print more quickly after you submit it.

From page 100, the answers to the quiz on Cree bird names are as follows:

piskwa – Nighthawk
kas-kas-kus-kee-ka-chas – Song Sparrow
little raven – Magpie
raven duck – Cormorant

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